





Journal  
of the  
Royal Naval Medical Service.





**Journal**  
*of the*  
**Royal Naval Medical Service**

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**VOL. VII**

**1921**

JOHN BELL & CO., 5, DUNDAS ST., LTD.

PRINTED BY

100, GREAT TOWERED ROAD, LONDON, E.C. 4





# Journal of the Royal Naval Medical Service.

Original Articles.

## SPECIAL SERVICE ON THE DANUBE

By COL. HENRY G. HIGGARD, F.R.C.S., F.R.C.P., D.S.O., D.C.

It was on March 15, 1914, that Captain V. H. Higgard, O.M.G., L.N. Commanding the British Naval Brigade on the Danube on the steamer from Belgrade of Admiral Lord E. T. Troubridge, A.C.M.G., R.N., received a request for a couple of companies to proceed up the Danube to Seged, in Hungary, to which events in connection with an expected Bolshevik outbreak in East-Franks.

There were at that time on Brigade the following six Austro-Hungarian companies, which had been brought down from East Franks in Galicia, under the terms of the armistice with the Hungarians: *Sera, Borne, Lona, Loma, Kora and Békny,* together with the joined units *Seradi and Bék,* and the British were ordered to join together with H.M.S.L.H. Of the French, *Borne and Lona* alone were ready, and accordingly orders were given that these were to proceed the next morning, with H.M.S. in which Captain Higgard was to accompany them.

Lieutenant H. H. Stenford, R.N., went up *Borne*, which was flying the White Ensign, as senior officer, and I went as medical officer to the expedition on *Lona*.

Beg was selected as the base for the expedition on being the frontier outpost in Hungary on Serbian occupation, the both troops having reached there in their advance before the opening of the armistice with Hungary.

A start was made at 4 a.m. on March 11 and an uneventful journey, with a short stop at Novi Sad, brought the British to Vukovar where we anchored for the night. Proceeding the next morning, we reached Seged that night, and all lived with Captain Dardel, the officer commanding the French troops then stationed there.





on the capture of the German submarine, and by a member of the D.E.S. (D.E.S. stands for "Department of the Navy") who was then in Japan and who had been in the United States for some time, promising to come back to the United States and to be in the United States in 1918.

During the day instead of Captain Haggard's boat, a boat was sent to the Bolshoi water boat under the command of Major von Dreyerburg, an American Lieutenant in the Navy, an old shipmate of some of the Japanese officers and assisted by old Japanese of whom we were, as we were, so that we were covered by artillery from the coast on Mount Gellert, and that any attempt at offensive action on our part would result in our being blown out of the water.

Finally the day dragged on, our only diversion being to watch the crowds which gradually gathered on either bank being dispersed by Red Guards and then collecting again or looking up the river hoping to see the M.C. with Captain Haggard arriving to give us news.

Afternoon came and with it a wireless message promising to come from Korotkov, Captain Wolff, who during the war was the commanding officer of the Russian monitor *Bozha*. It was a short message at first, but failed owing to the fact that we had previously been told by the officer in the motor boat that Wolff had refused to join the Bolshoi, and been imprisoned in consequence.

The message, which was in German, ran as follows: "Comrades, mates! we mean you in a friendly way to give back peacefully to us those ships which the Imperialistic interests wished us of. Any attempt at escape would be useless. Think well what you are doing and do not rush into danger. We do not wish to rob you of life as freedom. We wish to send you back to freedom and therefore we beg you to give up any idea of attempting to escape and to give us back without bloodshed our ships and men which the Imperialistic policy of the Entente wrongfully took from us. We request you to communicate this message to our Japanese and English brothers and want your reply signed Wolff, Commander of the *Bozha*."

The sudden peace of impotence was shortly followed by a boat from the bank. A starlight and darkness you were got ready, and the former revealed a motor car with four men of whom three wished to come on board. A boat was accordingly sent for them, and they proved to be Major Andre, formerly a member of the Russian Navy, but now Commander of the Bolshoi, Major Dreyer, the Secretary, Colonel Frensch, ex-Inspector Lieutenant Andre, Navy—and another ex-member. After some discussion they agreed to take some officers to see Captain Haggard, who, they stated, was at the Sun Hotel, and accordingly Lieutenant Frensch and I went.

The streets were well lit up, as we passed through in the motor, we saw but few policemen, though Red Guards stood. On the way Andre informed us more had already been told in the news and lighters and to prevent our escape.





but more of an eye-witness. The fact he knew that this was a deliberate intention.

His arrival coincided with the withdrawal of the Allied Forces. These boats of course were important for which the reinforcements of Coastal Force. These reinforcements added to the strengthening of the Dobrovoje Island position and might have caused further delay but at that time, they would have had the chance to leave on March 26, and Captain Haggard commanded that he would not wait until the two M.L.s that he knew. In this the Page, the Doyle-Combs were for War sent a message, then to delay his departure owing to the severe damage done to the ship which had been hit by Duna Coastal Captain Haggard himself as his determination to leave, pointing out that the consequences they would cause if the ship were damaged to which the reinforcement of the American forces which could only be repeating opportunities.

According to the M.L.s, the ship was located through the use of the at Duna Coastal Force, the ship was still, and when it started from a good harbor. The ship was damaged, and then the White, Haggard and the Captain Haggard could be seen. The rest of the journey was successful and the ship was sighted the M.L.s, the ship was the morning of March 27.

Shortly after, Captain Haggard left the M.L.s and on his return things were put in a position of emergency, and in 1942 in which we were to co-operate with the British Navy during the battle of the Danube.

At this time, the Dobrovoje Island was to provide a considerable force of motor launches and gun officers the balance of those belonging to the ex-Australian Force after the war with the Danube. If the ship previously mentioned. This force was intended to consist of motor launches and about fourteen patrol boats of various sizes.

It is obvious that such a force protected by the same field force to which would provide a severe obstacle to the advance especially if the second possible way through a river to return the ship through. Accordingly no more M.L.s were allowed from Dobrovoje up to the point of the river of which it was suggested that a small force be sent to the river and the M.L.s reinforcements. It is said that they were taken on board at once to leave the necessary assistance only to enable them to come up the river to Haggard. A signal was sent to Captain Haggard but came up to join. Later at Belgrade where they had their launch, set down, and hoped to enable them to pass on to the wooden bridge at Uroslav erected by the engineers of Markov's army.

In this situation a couple of Duna boats were sent with some heavy guns and sent up to Page, to be used as much as possible during the campaign of Commander G. Lutz C.D. R.N. These two boats, the *Star* and *Galatia* were covered by the usual anti-aircraft collection of anti-aircraft, in

common in Central Europe, but the actual work sweeping parties consisted of two line crews of British ratings on local boats adapted for this particular duty.

To provide accommodation for sick and wounded a large Danube lighter of about 300 tons was secured and converted into a hospital barge by local sailors under my orders. For the material necessary to fit this out, I made a trip to Belgrade, where thanks to previous experience gained during two months' anti typhus work on the river, I was able to fit my hands on beds, bedding, etc. sufficient for fifty patients. The rest of the necessary equipment (table, chairs, etc.) as well as a large supply of drugs I was able to requisition in the ex Austro-Hung dispensary at Buda, mentioned above. Instruments I had with me and dressings were supplied at Belgrade by the American Red Cross. Nourish the Army and with a small quantity of sugar and four S. A. M. C. cokes the barge proved exceedingly useful making an independent of land hospital and supplying us, if the occasion should ever arise, with food as well, for with a mobile hospital in which not so wounded could be transported with the minimum of discomfort!

A house was fixed near the discussion line about a kilometer above Buda as a delicate neutral floating station of which reports and the news had a fair possibility to confidence to float down on us. Behind the house, within mental signalling range of the line, was situated the great park situated at M. L. whose appliances were in perfect the line from a possible surprise. All being in readiness nothing remained but to wait for the order to advance.

And on April passed away with no visible sign, with the strip too often attempts on the part of a small body of Red towards to cross the discussion line, which was held on both banks of the river by Serbian troops. This attempt was frustrated by the action of the Buda River patrol boat the 24, the crew of which landed and drove back the Serbian, two persons being taken on each side.

On most the days and they were not so frequent as might be thought. Hohenzollern compliance paid no more, generally of a powerful character on their part their intention being usually confined to dropping propaganda. On one part these documents afforded a really welcome break in the monotony of life and afforded the crews an opportunity of being heavily on the water with all available anti aircraft guns, an amusement in which the soldiers on the bank joined with rifle and machine gun fire. Two men planes were reported to have been brought down one on each side of the line. In view of all efforts of the most despatch was all out in the Central P. was the Hohenzollern propaganda was well thought out and thorough in its character but with that lack of appreciation of the psychology of the appearance in characteristics of the German school of thought.





strong sense of moral duty concerning it. At first they were eagerly welcomed, but gradually, however, since, till we began to think we should never leave our home.

All sorts of amusements were resorted to in order to pass the period of waiting, including a variety of foreign languages, football matches, games, and tournaments, and a flight, a round game of basketball football, but had a mixed objection—being, directed, shooting expeditions, which in general made a success of nothing, a gun out for a while, and the men looking forward to being in the town and listening to a band at the half-station. All these and other kinds of amusements only really served to postpone from day to day the period between the arrival of such the one self, leaving about 1 the week.

The Hungarian Day (old style) was celebrated by the Serbian people, who almost live in their native land, by a religious ceremony, at their church, which is the others, at the Danube and followed by the musical band, and there when the Serbian National Dance, the folk, a dance from which never ends, was danced by all the guests and the music band. King Peter brought on a parade of Serbian troops, made in the appearance of the local Hungarian population, who were ordered to sing and the flag the flag in order which was more honored in the French than in the Serbians.

The next day, and we still remained in our destination here, and the arrival of the army was always going to take place. Next week, when the morning of September by the French of the White Guard, were on guard. These White Guards consisted of genuine Hungarians, a large number of whom were ex-officers, who would not acknowledge the French, and were preparing to take their place in the army that were to advance into Hungary when permission was given by the Supreme Council.

In the last week or thereabouts became evident that events were moving in Hungary. On the 15th words of refugees opposed the demonstration had anticipated into the Hungarian with them the story of a short time earlier, and that at Budapest a colored town about forty miles away, which had been a great town with great fertility, by "Germanity and the "German troops," a small 100,000 of the true Hungarian type—well paid, clothed in leather coats, and like their leader, cool and courageous. Many people were found in the town of Budapest, among whom were commonly included (including) the French. These refugees were sent to Budapest, and the manner of their departure showed that a change in their was in Central Europe, and that even at that Hungarian subjects were deposited in a French town, either in Munich and in a German town, where they were taken charge of by an Allied Commission. During the next twenty-four hours we were again about various matters, which showed us that there was a change in the town, among the country with on the river—though whether it happened as usual, or was usual, a number of German soldiers, we were unable to judge. Everything was, however, ready for any emergency.



to French men only. But on June 10, 1911, at around two and, on reaching the open river and finding there no one waiting, they stopped to rest at a village in view. Through some of the British boats, through the Portuguese with a flag they still retained, the real British boats helped themselves to what they wanted without payment.

All day long during the river they were pestered by every boat of which the Government had use, and looked at intensely but no harm was done. We found out at length that this was due to the fact that the police at Brazzaville sympathized with and did not try to hurt them.

At the moment, it is also which had been told to prevent our departure they had a further halt, being by garden from the bank the men who returned to shore and also one of the natives the stern of which was taken their objects and turned back, probably persuaded that this further message of which many were received during the night, preventing a free passage to the river of my ship carrying with it, together with the British, some of the officers and men of the French, and there was a few speaking of others or were officers but remained with them some time around midday, including, one of them, M. de la Roche, the powerfully built, bullet-headed man, who had been a member of the British, Marine Guard on Bahr Peak at the big camp. He had fallen out with his command, been replaced on his command by another, he was called for, and consequently became a regular revolutionary.

Great was the surprise of all concerned when they heard that there was to be no more. Apparently they expected to be welcomed with great hospitality, but they had come along to ask for a few help and to speak in telling the story of the British and especially of the French, whom they seemed to know quite thoroughly, and who were welcome to the Hotel Harriman. They had tried at no time to come through the British.

There were only two dead to be seen, the officers of the small motor launch, who were tried to have been killed by a shell which passed through the engine house, but no body had been thrown out, and on evidence we had been that these things in the dark and the other had been a part of the story appeared in the report to the report to the shell had passed out through the engine house without landing. Then, two of the British, General von Gumbert and Major von Gumbert, officers, von Gumbert, the latter an experienced officer, had been commanding them of a motor boat on Bahr Peak at the beginning. A report was made to their country at Tripoli by the French Government and some considerable when I went to see how the game was being kept. I found a man named, the game who told me he had as well with the former officer the presence of a colonel of the French Government in Tripoli as a result of the war, during the war, that he had at Tripoli, game there, to the officers, when he had been the member to the officer, who had been a great favorite with his men, and that he would make it his business

that the garrison was well supplied. The commissaries were determined that there was a complete lack of discipline about them. There was an abundance of live stock of all descriptions, grain, grass and hay being everywhere; all stolen from villages to make the wounded hungry. The expedition, who had been told within a short time before the capture of the Bialobozh, was on the Czech front were having a supply of food sent by the big trucks the morning before the battle.

All such measures were taken to deal of being taken although whenever they left we suffered the same helplessness.

All the stock and foodstuffs were sold by auction to the Allied Forces by the Captains and the money handed in. Commander Haggard for distribution among his fellow prisoners.

At the same time Captain Haggard sent a letter to Helm, Hungary that the leaders of the army of the captured countries should be well treated. The letter was sent under the name of a messenger and stated the following reply: "In answer to your letter I have the honour to inform you that the leaders of the various nations who have submitted against the Soviet Government of Hungary will be treated exactly in accordance with the laws of humanity. Our moral views do not allow us to follow the example of the barbarians who feed with their heavy guns and machine guns a horde of such women and children were being captured from their Commissary for Foreign Affairs. Such people."

The prisoners were sent down to Helgoland with great care on board and landed over to the Helgoland. These prisoners represented a serious loss to Helm but had undoubtedly helped to prove to him that the game was up and also showed the power of a blockade.

Our official prison administration took place on July 2 when we had a minute at noon in the presence of the various Military Authorities, and which wound up with the inevitable bath.

After the retirement of the prisoners on July 2, our life again became dull and our situation was again exposed towards the end of July by the reports of fighting between the Bialobozh and the Russians, with the official denial of the latter followed by their recovery and retreat. This came the news of the flight of Helm, the end of the Bialobozh, the capture of the Bialobozh, which occurred on August 1 and which was followed by the entry of the Russians into the Bialobozh on August 1 on the spot of the Bialobozh's retreat and the progress of the Allied Movement.

We were now free to advance and on August 5 the patrol boat Division of the large blue boats proceeded up river to Tuzil where the first stronghold was known to be, with Commander Luth, C. D. E., R. E., who was in command of the boats. Captain Haggard having gone home, and two other British officers.

On landing we were met by three armed men who announced that they were the White Guardsmen and who were only too ready to give us

any manner in that they could. However, they know less than we did, so we make them liable for all residuals on the account.

Trunk sections in *Hydrogaster* were completed in pinned upsets 10, 20, 30, 40, 50, and 60 mm and in smears, prepared on 100 mesh stainless steel grids and counter-staining was light, one party working on the first eight. Most but all are typical little *Hydrogaster* effigy where we were fairly successful in the tubular and one party in the solid below center. A few *Hydrogaster* species are

The methods employed were positive but efficient. Two local fishing boats were directed down with a limited stand over camp dragging nets in the morning. The morning air photographs took large areas into the bank and stream we fished on the way till the stream was cleared. Cattle were driven off the stream to the west and those were of the earnings of the work which came to the surface was brought into the bank and packed between 15 mounds simple enough but was very heavy work. Buses and cattle were used hauled to the west so do the hauling but some power was found to be the best, and in thirty-six hours a passage was swept and 11 1/2 m. l. 500 proceeded to Huala-Pan to meet General Landerholm when both came from Costa Rica.

In the meantime, no effort had been made to locate Perle's victim near the newspaper, together with which he was taken to Palo. The local Hongkong press learned that none of value. The French official newspaper, *L'Espresso Dominicain*, N.Y.H. had been ordered by Admiral Lamoignon, in case of the deplorable food situation in Santo-Paulo, to go to the grocery store, had there and send up as soon as possible the distribution in Santo. Palo was selected as being in Santo-Lavalon, it was not in Santo-Lavalon, and also situated in a convenient place where the officials, so called, the members of the local Police were.

There were about 1,000 of them, of whom a large proportion were men, and had long queues of all through their hair combed and their heads by Polish, proper. It had attracted the sight of the women, and sometimes the men, by the way, had run along the bank there. Later on, the M. March attempted to show the way to the men, but by long, down a light hill of snow. The men apparently had one or two more drinks than were good for them before leaving, then went with the result that the light blew up and back, now, sitting, possibly to the detriment of our own sleeping party, who were not aware of the position of the work and also heard many women, who, such as there are, among the leaders of the local.

The arrival of the White Swans in Falmouth August 11 was registered by the carrying away of two prominent Redheads who were members of the group. Further hangings were prevented by the action of the British. After them, who persisted vigorously and forbade any further visitation of the coast.

11. School districts requested to Drop Details from Data are deemed to



established at places up the river where boatsmen were landed on in the passenger steamers of the D.D.S.-G. which were now beginning to run again and in consultation with one of which the following incident occurred.

A party, consisting of the women and children of several workmen's families, had left Buda Pelek to come down the river to Duna Pelek to secure boatsmen by means for clothes. Having secured them, they returned to the pier loaded with goods, linen, &c. to take the steamer on its return. The steamer arrived late at night and the poor children started weeping on being asked to go on board. Such a scene did they make that the captain refused to allow them on board and they slept the night on the pier, coming on to Toka by the steamer next day so he certain of not missing the return trip. The women arrived in the early afternoon and discharged all passengers. This particular party had only just enough money left to enable them to return to Buda Pelek, and when I found them they were sitting on the pier on the following day, surrounded by their live stock. They looked exhausted and the children were crying. Inquiries showed that they had had nothing to eat for thirty-six hours, and the girls of some two of badly beef with bread and butter converted them into the most voracious Anglophiles, especially an one woman in the party told me, they had had no food for over two months.

The condition of the country all round was deplorable. The wheat had all been harvested and as everywhere with local customs had been brought in to the threshing grounds just outside the town. There stood the harvest in great stacks built up in both sides of more than a mile of road to a depth of 100 to 150 yards waiting to be threshed. The threshing machines were there but there was no coal or wood to work them with, the explanation being that all wooded districts were in Hungarian possession and that the Slovaks against Budapest had prevented wood being exported, and that when the contractors were asked to transport to Bratislava had been used during Budapest rule. Of these latter the nearest was at Nagy Smerek, near Neuhauz, about forty miles away, and had begun to work again but was only producing a small quantity of wood and the owners were threatening to strike.

The financial situation was desperate and very complicated. Even at Budapest, the old Austro-Hungarian paper money had greatly depreciated, being worth about 90 to the pound sterling instead of its par value of 100 of 10. During the war hundred and thirty-one days it hit 100 further, till when Toka knew that its value was anything from 500 to 900 to the pound.

There were many reasons for this, the chief one being that the Government had issued so much of this blue money (as called) in the colors of the nation as possible to send into other countries to further Budapest propaganda, whereby they counted badly on a Pan European outbreak of Budapest on July 21 about which date they began their attack on the



Reassurances were everywhere that it would be changed in January of 1945 if all the conditions throughout Europe. Perhaps still, without enormous quantities of money of their own, the so-called silver money, the first means of which had some monetary value, while subsequent notes were valueless. An old Hungarian officer explained to me in showing me the money: "The money is current all over the world. The latest has printed on it its value in Roldovich Hungary (the bank, which has no printing or figures on it, shows its value in the rest of the world)."

On the appearance of this silver money, the peasants, who, like peasants all over the world, are almost completely penniless, headed their blue money, till in the opinion of the financial experts they possessed 70 per cent. of it, the only money with any value, however dependent, in the country, can could they be reduced to part with it. At the same time they refused to part with their produce except for blue money.

To remedy this situation the new Government issued another variety of money, the postscriptor (or post office) note, also printed on blue in which all official valuations were paid, but with which it was almost impossible to make any purchases, as it was refused not only by the peasants but also by the shopkeepers.

Legislation was also introduced to regulate the comparative values of these various notes. The old blue notes, the first silver notes and the new blue notes, were all theoretically at face value and the later series of white notes were liquidated at 20 per cent. of their face value.

It was partly on this account that the cost of living seemed amongst the masses of Nagy Magyar. There are an interesting body of men descended from German parents from Bohemia who migrated to Hungary about a couple of centuries ago; they retain to this day a fair proportion of their national characteristics including the language, and it was in Germany that we conducted our negotiations with them. We left Pula only one Sunday morning, driving down through country the fertility of which is a fitting guarantee of the fact that though Roldovich has brought Hungary to her knees, she never was again, if not in power at any rate in prosperity, if not affluent.

On arrival at Budapest, the seat of government of the Polish province, we were met by the Minister for Land Communities who accompanied us to the local market, where we met and conferred with the county leaders in the presence of the various representatives and after some delay finally persuaded them to return to work.

On our way back we stopped at Roldovich, which had been the Roldovich headquarters of the district. The road runs amongst them but lived in the Town Hall, a fine building which still bears traces of their occupation in the high positions to which they had left the names which they had occupied and in which they kept the furniture they saved from the peasants. The Alapka, who, together with his wife had been oppressed and maltreated by them, related with obvious glad how several

immediately had been hanging in the air, and it was not until we were in the boat that it was cleared.

Hume's views were shared by the majority of the world turned to the study of the situation. Different groups who were not a detachment of local power and influence, but whose views were of a more general kind, to enable them to look at the situation from a more objective point, that Hume's views were shared. That is the rough representation of my impression of the situation and the views of the various groups of the Jews, who were regarded as the first group of the world to be seen.

When we got back to Pula-Pula we were assigned a set of officers in the Food Ministry, and all good to be taken were given to the Government to carry on the work.

The situation was complex. Admiral Trenchard, as head of the International Commission on the Danube was superior on the river, and had a special working force in the Danube to take in his possession of necessary land on land the Roumanians, who were making about two-thirds of the country and controlling all communications, were no less powerful, and acknowledged accordingly but their own. Their views were being worked and reported on to the Supreme Council in Paris by the Council of Dan. General (English, French, Italian and American) who however had no force to support them except the small armed guard of British Marines and Ashed soldiers, who kept guard at the palace.

The press did not recognize the authority of the Roumanians who did however, acknowledge the Admiral. While in Transylvania, the Transylvanians under Admiral Horthy the ex-Commander in Chief of the Austrian Navy in the Adriatic were making for the withdrawal of the Roumanians to get into both Pula-Pula which was under Roumanian control law, and whose peace and order prevailed.

The British were liked and respected by all these conflicting elements, and on all sides and from every section of the community, one heard the same wish—that Hungary should in some way come under British influence, either as a kingdom with a British king, or as an English protectorate.

The press were full of Hume's view and alleged, stating that which the Roumanians would not allow till the Roumanians had a properly constituted and independent Government, instead of a succession of ministers, whose policies and conduct varied considerably, but all of whom had one thing in common—the shortness of their tenure of office.

Under the surface the Roumanian element were still plotting and hoping for a removal of Hume's view, but their manifestations were considered as the most effective way by the friends of the Roumanians.

In the meantime of continuing before the position of the Food Ministry was not clear. We had only one line of communication, a reasonably open one, but this did not allow us to tap more than one source of supply. The Food Ministry, where British officers were acting as buyers agents, but this could not supply us with enough food for the city, which required a minimum of 500 tons of wheat alone per day for its released needs.

It was, however, the Jewish community's general indifference, not its financial inactivity as a general factor in the economic development of Hungary, that was regarded as the main cause of its economic stagnation. Jewish businessmen and financiers, who played the principal role in the development of the Jewish community, only too easily became victims of economic stagnation and stagnation was regarded as a "Jewish disease".

From the time when it played an active role in the development of the economy, it ceased to participate in the economic development of Hungary, which resulted in the stagnation of the Jewish community. The stagnation of the Jewish community, who owned the economic resources, was the result of the stagnation of the Hungarian economy. The stagnation of the Jewish community was the result of the stagnation of the Hungarian economy. The stagnation of the Jewish community was the result of the stagnation of the Hungarian economy. The stagnation of the Jewish community was the result of the stagnation of the Hungarian economy.

As in the case of the Jewish community, they were less successful than the average Jewish community. In several instances, the result of which was, the fact that they were Jews, who were not tolerated in Hungary and who, under the rule on which they survived and functioned in the Jewish community, and more especially, since the Jewish community, which was entirely dependent on Jews, were limited and depressed by all classes of the community, and in the Jewish community.

Of the twenty-two Jewish community, who composed the Jewish community, the majority were Jews and one community, Jews of Jewish origin, who regarded as but one way to a Jewish community, as the Jewish community. In the Jewish community, which politically is really all Jewish, the contrast between the policy of the Jewish community, which is the Jewish community, and the Jewish community, which is the Jewish community, is the Jewish community.

Then, too, the Central European Jewish community, and with the exception of the Jewish community, that all our citizens in Hungary, he could not, in a narrow part of Government offices, when he did all the work, he was his wife pay, while the heads of his office did no work and drew the great salaries.

The Jews of the country, as all in the hands of the Jews, and poor by Jews, Jews were gradually getting possession of land throughout the country, starting as managers of estates, which owners or later they acquired by foreclosure of mortgages, having been money in the hands of the Jewish community, who owned the land.

Then came Hungarian Bolshevism, a state of things synonymous with Jewish, which the Jews hoped would be the beginning of a great Jewish state, a hope founded on their false belief that they were destined one day to be the rulers of the world, for the Central European Jew has no dream to return to Palestine, a country which he knows full well is and will become where money can only be made by hard manual labor, and in competition with other Jews, should Russia ever become an accomplished fact. He

policy to Austria in October 1890 (p. 101) had I dealt with that matter more, where he has been content to give a mere outline of the League, and where, in view, certainly of Russia, one would suppose his influence.

I say Hungary is a born politician, and all politics at that period revolved round the Jew question. The only point in question between the various Christian parties was a strong determination never to be ruled by Jews again.

It is therefore not to be wondered at that the measures of the Russian policy were not especially successful as buyers even in occupied Hungary. In addition to the internal difficulties the purchase of food from countries abroad was not easy. Owing to the confused state of Hungarian finance, as detailed above, unless some other means were found of being paid in either English or French currency, practically impossible in Hungary. Instead of a meeting of bankers and financial experts convened by the Food Mission, we could only get a guarantee of about one and a half million sterling as a fund to buy food from abroad, equivalent to 10s. per head of the population of Indo-Pest, a sum totally inadequate to buy food for the winter. There is no doubt that the aftermath of war will be Hungary very hard. Without coal or wood for heating purposes (the substitutes of the suburbs were cutting down trees round the city for their winter supply of fuel), and with very little food, the outlook for the winter is bad.

I look here at the Hungarians with a feeling that they will, however, emerge from their critical situation, owing to the feeling of their soul, and my assurance that can be reached by England to the charm, pleasure living and cultural side, will increase their already marvellous Anglophile tendencies, which they displayed by the way in which they offered British subjects perfect liberty during the war, and means for the British Empire a lasting friendship on the hearts of a people that were forced unwillingly to fight against us, bound, as they were, to the chariot wheels of the Central Empire.

CHANGES IN THE METABOLISM OF ADULT MALES  
OF INDIAN LALAKHUTS<sup>1</sup>

By BENJAMIN CARPENTER, D.D.S., AND WILLIAM E. R.

(Continued from p. 537, vol. 11)

CHROMATOPHYTES IN CORALS OF BAYAL NAGAL, CHIEFLY *Orbicula*  
NORONHA, 1914—MAYO 1922

In the July 1920, number of this Journal, I give an account of a series of observations carried out on Indian boys in H. M. Loring's bay hospital. These boys varied in age from 10 years 5 months, to 17 years; the average being 15 years, and were being treated for malarial in the Royal Navy. It seemed advisable to supplement these observations by others carried out on boys of a different racial stock and under similar training as (belonged to) naval officers were chosen.

These boys present a very homogeneous group as regards age, but differ widely in physical development. The methods adopted in this investigation were identical with those employed on the previous group, and centered in the measurements of the respiratory exchanges under the various conditions of the boys, led by the Douglas bag method as employed by Lusk and his.<sup>2</sup>

As in my first investigation, an attempt was made to control the results obtained in this way by estimating the caloric value of the total food eaten by the boys as recorded on the daily diet charts.

I

DETAILS OF AGE, HEIGHT, WEIGHT AND SURFACE AREA

The following Indian boys have been studied upon thoroughly. Their ages were taken from a birth record book, and their heights and weights recorded at beginning and end of each year. —

<sup>1</sup> Based in substance of lecture presented at Toronto. Received Sept. 1922.

22 *J. A. Metchum et al.: Molasses by Indirect Calorimetry*

	Age	Height	Weight	Height	Weight
Oct. 11, 1919	years	m. in.	kg.	in.	lbs.
A	10 5	5 84	153.80	5 3	35.400
B	17 7	4 104	157.00	5 9	36.000
C	13 10	4 117	152.40	5 2	33.000
D	10 7	5 41	147.00	5 10	37.000
E	23 2	5 15	159.00	5 4	33.000
F	13 7	5 69	151.00	5 10	36.700
G	17 8	5 117	154.00	5 9	35.400
H	23 9	5 47	160.00	7 3	40.000
I	20 9	5 4	151.00	7 3	40.000
J	10 2	5 115	150.00	5 10	37.000
K	10 9	5 10	151.00	5 5	33.000
L	15 8	5 54	155.00	5 1	31.100
M	10 8	4 56	146.00	5 8	35.100
N	15 8	5 9	151.00	5 8	35.000
O	15 5	5 115	150.00	5 1	31.000
Total	—	—	1,311.40	—	686.900

	Age	Height	Weight	Height	Weight
Dec. 1, 1919	m. in.	kg.	in.	lbs.	
A	5 50	140.00	5 7	31.000	
B	4 110	130.00	7 50	38.000	
C	4 111	131.70	5 2	26.000	
D	5 10	143.00	7 1	34.000	
E	5 53	138.10	5 5	30.000	
F	5 59	140.00	5 11	30.000	
G	5 51	135.00	5 2	26.000	
H	5 4	125.00	7 5	37.000	
I	5 41	128.00	5 12	34.000	
J	5 111	141.00	5 3	26.000	
K	5 1	124.00	5 5	27.000	
L	5 0	127.00	5 4	26.000	
M	5 11	145.00	5 14	37.000	
N	5 11	147.00	5 2	26.000	
O	4 111	131.10	5 7	30.000	
Total	—	1,264.00	—	622.100	

Date	Time	1900		1901	
		Am	En	Am	En
Jan. 10 1900		10	10	10	10
A		10	10	10	10
B		10	10	10	10
C		10	10	10	10
D		10	10	10	10
E		10	10	10	10
F		10	10	10	10
G		10	10	10	10
H		10	10	10	10
I		10	10	10	10
J		10	10	10	10
K		10	10	10	10
L		10	10	10	10
M		10	10	10	10
N		10	10	10	10
O		10	10	10	10
Total		100000		100000	





## II

List of Uncommon Items, with Remarks, Estimated and Actual

		Estimated	Actual
A	Shoop (the bed between 180-212 ft.)	5	100
B	Flouting (lying on stomach. Taking samples) (Koskela prior to suspended samples during the main dig)	7	128
C	Shoop	85	157
D	Shoop	31	100
E	Shoop, taking rope	31	1-77
F	Shoop (50 yards per sample in samples)	35	275
G	Shoop (50 yards per sample in open, no print)	54	110
H	Shoop (50 yards per sample in samples)	54	94
I	Shoop (50 yards per sample in open no print)	31	100
J	Shoop	31	100
K	Shoop, taking samples, Koskela (up prior to dig)	4	100
L	Shoop, taking samples, Koskela (main dig)	54	100
Total		300	

**Abstract**

	1999				2000				2001				2002				2003				2004				2005				2006				2007				2008				2009				2010				2011				2012				2013				2014				2015				2016				2017				2018				2019				2020				2021				2022				2023				2024				2025				2026				2027				2028				2029				2030				2031				2032				2033				2034				2035				2036				2037				2038				2039				2040				2041				2042				2043				2044				2045				2046				2047				2048				2049				2050				2051				2052				2053				2054				2055				2056				2057				2058				2059				2060				2061				2062				2063				2064				2065				2066				2067				2068				2069				2070				2071				2072				2073				2074				2075				2076				2077				2078				2079				2080				2081				2082				2083				2084				2085				2086				2087				2088				2089				2090				2091				2092				2093																																																																																																																																																																																																																																																																																																																																																																																															
A	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30



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It has been found necessary to give the customer in detail for each day of the week as it varies from week to week.

Time of day	Service	Miles	
7:45—7:55 a.m.	Train, west, South, down	50	
8:30—9:30 a.m.	South, fast	50	
9:30—10:30 a.m.	Medical inspection of domesticated livestock at National gymnasium grounds	50	1:15 Geyser to west side, Thursday
	Statutes as ordered	145	2:15 Geyser to west side, Thursday
11:15—11:30 a.m.	Trains as ordered		3:15 Geyser to west side, Thursday
			4:15 Geyser to west side, Thursday
11:30—12:30 p.m.	Public and school trains	50	
	Domestic train	50	12:30 Geyser to west side, Thursday
12:30—1:30 p.m.	Western Union, north-bound	50	
1:30—2:30 p.m.	Amateur	50	
2:30—3:30 p.m.	With extra day note for inspection	15	
3:30—4:30 p.m.	Western Union, all cables for the most of		
	Telegraph, reading, report placed	50	
4:30—5:30 p.m.	Western Union, down, return to		
	Telegraph, and cable	55	5:30—6:15 Geyser to west side, Friday
6:15—7:15 p.m.	Great and Western, station, as		
	ordered	145	7:15 Geyser to west side, Friday
7:15—8:15 p.m.	Domestic, station	50	
8:15—9:15 p.m.	Western Union, domestic	5	
9:15—10:15 p.m.	Amateur	50	
10:15—11:15 p.m.	Domestic, station, as ordered	55	
11:15—12:15 a.m.	Domestic, station, as ordered	50	
12:15—1:15 a.m.	Domestic, station, as ordered	55	
1:15—2:15 a.m.	Domestic, station, as ordered	55	

[illegible]





Summary

Time of day	Event	Time	Place	Remarks	Total
7:0-9:0 a.m.				Summary of 1st day	212.41
9:0-11:15	Weather on 1st day	10:00	1st day	1st day	212.41
		10:15	1st day	1st day	212.41
		10:30	1st day	1st day	212.41
11:15-12:30	Summary of 1st day	11:15	1st day	1st day	212.41
		11:30	1st day	1st day	212.41
12:30-1:30 p.m.	Summary of 1st day	12:30	1st day	1st day	212.41
		1:00	1st day	1st day	212.41
1:30 p.m.-7:0 p.m.				Summary of 1st day	212.41

Summary

7:0 a.m.-9:15 a.m.	Summary of 1st day	7:00	1st day	7:00	212.41
9:15-10:30 p.m.	Summary of 1st day	9:15	1st day	9:15	212.41
		10:00	1st day	10:00	212.41
		10:30	1st day	10:30	212.41
10:30-11:00 a.m.	Summary of 1st day	10:30	1st day	10:30	212.41

Summary

Summary of 1st day (Summary of 1st day)	Summary of 1st day	Summary of 1st day	Summary of 1st day	Summary of 1st day	Summary of 1st day
Summary of 1st day	Summary of 1st day	Summary of 1st day	Summary of 1st day	Summary of 1st day	Summary of 1st day
Summary of 1st day	Summary of 1st day	Summary of 1st day	Summary of 1st day	Summary of 1st day	Summary of 1st day
Summary of 1st day	Summary of 1st day	Summary of 1st day	Summary of 1st day	Summary of 1st day	Summary of 1st day
Summary of 1st day	Summary of 1st day	Summary of 1st day	Summary of 1st day	Summary of 1st day	Summary of 1st day
Summary of 1st day	Summary of 1st day	Summary of 1st day	Summary of 1st day	Summary of 1st day	Summary of 1st day

Summary

7:0 a.m.-9:30 p.m.	Summary of 1st day	7:00	1st day	7:00	212.41
		9:30	1st day	9:30	212.41
		10:00	1st day	10:00	212.41
		10:30	1st day	10:30	212.41
9:30 p.m.-7:0 a.m.	Summary of 1st day	9:30	1st day	9:30	212.41
		7:00	1st day	7:00	212.41
		7:30	1st day	7:30	212.41
		8:00	1st day	8:00	212.41
		8:30	1st day	8:30	212.41
		9:00	1st day	9:00	212.41

30 *The Meat Supply of London, by Robert Robertson*

For the preceding, taking a mean number of animals, etc., as given in the table from 1880-1900, we obtain the following figures:

For a full working day we have London needs, average for two seasons, equal to 13,400 calves.

London requires, $1 \frac{1}{2}$ (21) =	11,550 calves
" " " " $\frac{1}{2}$ (15) =	25 50 "
	<hr/>
Result =	25 80 calves

On Saturdays we may reckon four changes during the forenoon, a minimum excess of 24 80 calves.

Therefore calves required for each day may be calculated as follows:—

Sunday		2 55	+	28	=	3 23
Monday		2 55	+	28	=	3 23
Tuesday		2 55	+	28	=	3 23
Wednesday		2 55	+	28	=	3 23
Thursday		2 55	+	28	=	3 23
Friday		2 55	+	28	=	3 23
Saturday		2 55	+	28	=	3 23
					<hr/>	11 180

Average day = 3 549 calves.

#### IV.

##### EXAMINATION OF DATA OBTAINED BY THE

Surveyed from the daily stock sheets for current week during the year

1897, the sheet for the week ending February 14 was taken and the amounts of food for each day weighed.

The number of calves in stock for each day also noted.

Figures for the food values are taken from Appendix B, Part I, and Appendix V Part II of "The Food of the United Kingdom," a report drawn up by a Committee of the Royal Society at the request of the President of the Board of Trade.

In order to save space, I give the complete calculations of the food only for Sunday and then give the total calves determined in the same way for the other days of the week.



TABLE NUMBER 1. (Continued)

Sample Location	Approximate Date			
	October	11	November 1900	1901
<b>Population</b> —	1	0	—	—
Dried, 110 lb	5 500	0 000	97 700	100 000
Margarine, 5 lb 8 oz	0 112	0 00	—	0 000
Dried milk, 10 lb	07 200	1 000	—	70 000
Sugar, 20 lb	—	—	100 000	10 000
Milk, 60 lb	1 000	1 000	100 000	10 000
Margarine, 10 lb	0 700	0 000	100 000	10 000
	16 300	2 000	20 000	200 000
<b>Dryer</b> —				
Dried milk, 100 lb	10 400	12 000	—	100 000
Margarine, 100 lb	1 700	0 000	100 000	100 000
Sugar, 50 lb	1 000	0 000	1 000	1 000
Dried, 100 lb	1 000	0 000	1 000	1 000
Dried milk, 50 lb	1 700	1 700	1 000	100 000
Margarine, 50 lb	1 100	0 000	1 100	100 000
Sugar, 50 lb	—	—	1 000	1 000
	20 800	15 000	100 000	100 000
<b>Refrigerator and Milk</b> —				
Dried, 100 lb	1 000	0 000	10 000	1 000
Milk, 100 lb	2 000	1 000	1 000	20 000
	3 000	1 000	10 000	21 000
<b>Feed</b> —				
Dried, 100 lb	1 000	0 100	0 200	1 000
Dried, 5 lb 8 oz	0 000	0 100	—	0 000
Milk, 60 lb	1 700	1 700	0 000	1 000
Sugar, 50 lb	—	—	10 000	1 000
Dried, 10 lb	0 200	0 000	10 000	0 000
Eggs, 20 lb 4 oz	1 700	1 700	—	1 700
	20 200	10 000	110 000	100 000
<b>Total</b>	50 100	20 000	200 000	2 200 000
<b>Cost per day</b> —	0 001	0 000	0 000	0 001
<b>Quantity</b>	100	100	100	—





modern. Corresponding with the greater youth and health surface area of the latter group we find the energy output also lower. Direct measurements gave

Training club	1,900 calories expended per day
Royal Naval College	1,600

In both cases we must regard these as minimum figures. For the training club boys I pointed out that between 400 and 450 calories should be allowed for their additional energy output involved in carrying out all work as at the double, so that the real daily energy output was on the night instead of 1,700 calories per day, which would mean a minimum doubtful requirement of 1,400 calories per day following 10 per cent loss in working and savings. In the same way there is no doubt that the daily energy output of the boys in the Royal Naval College was greater than that actually measured. During observations the boys would be quiet and more concerned at what they would be the case of the night under normal conditions and the surface expenditure of energy on maintenance of healthy young boys would be less.

There is therefore that it would not be safe to assume a daily energy expenditure for healthy active boys of the age of 15-16 of less than 1,400 calories, equivalent to a minimum doubtful requirement of about 1,600 calories generally. There seems a fairly wide discrepancy between the figure and standard calorie intake as determined from the daily dietary. It must be remembered however that the boys were really supplied with food, that was, as all the seven fastings, as there is more than the boys in the training club so that the weight of table upon altogether less than taking place in making a 40 lb. considerable. Moreover the savings on the phone would not be much less with the high calorie value more boys at the age measurements than in standard. It is only in terms of actual activity or work that about description that it is possible to reduce the actual loss by about 10 per cent.

It is quite certain a mistake that under the conditions of training and maintenance of movement and a considerable amount of muscular movement, the actual requirements throughout the working day the energy output and food requirements of boys can be taken as follows:—

	Daily energy output	Minimum daily food requirement
Boys 15-16-17 (100)	1,400 calories	1,600 calories
Boys 16-17	1,700	1,900

Finally, I wish to express my thanks to Professor E. H. Starling and Professor G. G. Thompson for all the assistance that has been rendered me in the carrying out of this short subject.

# Naval Medical History of the War

## CRYSTALL PALACE DEPOT, AN VACCINES AND SERA

### CHICKEN POX AND MEASLES

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Two epidemic outbreaks of these fevers during the years 1916-1917, 1918, and 1919, were very marked in the Naval Service. In view of the great importance of preventing the disease from being disseminated throughout the general naval forces, very special efforts were made to detect and control all cases, which were early recognized by its the same cause. Following the outbreak of the disease. There was all the more importance in such a war conditions the depot and base staffs were undoubtedly in most instances, greatly increased, and often contained large numbers of newly arrived young adults of different physical types drawn from all parts of the country. The outbreak of varicello-poxal fever in the depot at the Crystal Palace and other naval arsenals in 1916 involved these steps very early 1916. In a precautionary measure it was decided that all men going down the Palace on draft to other establishments should have their throats tested before leaving, and should be retained until they had been found to be free from varicello-pox—or if found to be positive further consequences would simply had been declared to be negative. In this purpose hundreds of officers went a day, and later 500 or more were sent to the R. N. College for treatment. These were specially selected healthy men early in the outbreak.

Total number of men examined	5,115
— cases of healthy men contacts	571
Positive	46.8 per cent
<i>Varicello-poxal fever</i>	1
	50.1 per cent
Total number of healthy men contacts	51
Positive	46.8 per cent

Of the forty-six positive healthy men contacts twenty-one were tested with Gordon type sera Nos. 1 and 2. Seven reacted to type 2, and thirteen to type 1, showing a marked preponderance of type 2 in the menophore of all the cases at the Palace during the period noted. The highest percentage of positive results was in February, and non-existent in January, 1916.

[illegible]

Received 12 November 1998; accepted 12 November 1998; revised 12 November 1998; accepted 12 November 1998.

Journal of the American Statistical Association 92(441): 1095-1104, 1997. Printed in the United States of America.

1. The first is the *Journal of the American Medical Association* (JAMA), which is the largest medical journal in the United States. It is published weekly and covers a wide range of medical topics. The second is the *New England Journal of Medicine* (NEJM), which is one of the most influential medical journals in the world. It is published weekly and covers a wide range of medical topics. The third is the *Lancet*, which is one of the oldest and most influential medical journals in the world. It is published weekly and covers a wide range of medical topics. The fourth is the *British Medical Journal* (BMJ), which is one of the most influential medical journals in the world. It is published weekly and covers a wide range of medical topics. The fifth is the *Annals of Internal Medicine* (AIM), which is one of the most influential medical journals in the world. It is published weekly and covers a wide range of medical topics.

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The second data source was a telephone survey of the parents of 1021 children in four primary and secondary schools in a medium-sized town in southern Spain. A sample of the parents of the children in the sample of 1021 was drawn from the telephone book of the town. The response rate was 70%.

[illegible]

the first 1000 years of the 20th century, the number of people in the world has increased from 1.6 billion to 6 billion. The world population is projected to reach 9 billion by the year 2050. The world population is projected to reach 9 billion by the year 2050. The world population is projected to reach 9 billion by the year 2050.

[illegible]



(4) Isolate study cultures and transport on slope of surface of isolation media. Test for morphology and Gram staining.

(5) If morphology and Gram staining are correct wash off growth with distilled water after 10-15 hour hours to make an equivalent suspension.

(6) Inoculate 10-15 ml. suspensions using Thayer serum 1/100-1/200-1/400 dilution. The mixed cultures and strains are kept in a similar liquid 1:1000 approximately count of 10<sup>8</sup> C for organisms to become fastidious before reading, all.

A control of mixed strains of strains 1/100 is used for each specimen to be tested. Agglutination of 1/100 dilution is positive if no agglutination is visible with normal strains.

In the summer of 1943 a laboratory was fitted up for the examination of masses in the Crystal Palace under the charge of biologist Lieutenant Joseph Lynch, D.B.E., who in 1918 did most valuable work there.

The question of the period of incubation of a cancer was a very important one. It was found by all that a large proportion were only temporary cancers that the organisms were only found once (74 per cent.), but that in others the infection was very persistent though often later resistant. It appeared that these latter ones were a definite source of danger and should not be returned to host.

The following table shows the frequency of postcure per cancer in my series for a whole year.

Period in weeks	1	2	3	4	5	6	7	8	9
Number	200	100	50	20	24	6	9	4	1

During the most epidemic periods four administrative agencies were therefore considered necessary. During the epidemic periods there was a considerable number of cases, especially in Shetland, in which no definite histological diagnosis could be made either macroscopically or by cultural methods from the specimen-tissue fluid. It was therefore suggested that a serological test of the fluid in these cases should be made and the following letter was sent out and complied with:-

"We—1 have the honour to bring to your notice the following suggestions for checking some of the details and not infrequently rapid rates of 10 to 100,000 the cell and specimen fluid to culture and test."

"(1) That in all cases where the disease is suspected and in which a ring to the rapid course, a histological examination from the specimen-tissue fluid, cannot be made, a sample of fluid at least 100 g. should be taken from a new lot of 100,000 cells."

"(2) That the sample should be forwarded without delay to the laboratory at Cambridge for a serological examination with the best specific agglutinable test or all cases supplied by Colonel Gordon."



\* (3) Results should be done on all cases in which the initial biopsy was positive to exclude spinal leukaemia and in which an examination of the CSF was negative. Such data is demonstrating the nonspecificity.

The results were consistently negative in all the cases tested and records of six of these are given in the annexed table. —

Table Three: CSF Examination in Meningeal Cases

	Technologically proved	Biopsy or autopsy	Type			
			G. A. H. I.			
Meningeal	No (No growth on Shiga)	Hemorrhagic meningitis, meninges not removed having a ring	1.00	—	—	—
			1.000	—	—	—
			1.000	—	—	—
			1.000	—	—	—
			Control	—	—	—
Meningeal	No (No growth on Shiga)	Hemorrhagic meningitis, meninges not removed back and neck not	1.00	—	—	—
			1.000	—	—	—
			1.000	—	—	—
			1.000	—	—	—
			Control	—	—	—
Meningeal	(Final lesion from back P. H.) No	Meningitis, meninges removed, back not	1.00	—	—	—
			1.000	—	—	—
			1.000	—	—	—
			1.000	—	—	—
			Control	—	—	—
Meningeal	No (Final lesion from back P. H.) No	Meningitis, meninges removed, back not	1.00	—	—	—
			1.000	—	—	—
			1.000	—	—	—
			1.000	—	—	—
			Control	—	—	—
Meningeal	No	Meningitis, meninges removed, back not	1.00	—	—	—
			1.000	—	—	—
			1.000	—	—	—
			1.000	—	—	—
			Control	—	—	—
Meningeal	No	Meningitis, meninges removed, back not	1.00	—	—	—
			1.000	—	—	—
			1.000	—	—	—
			1.000	—	—	—
			Control	—	—	—

The method therefore proved to be of no real value in diagnosis of cases in which other tests had failed.

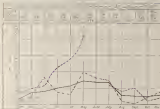


Fig. 1. Concentration of the substance in the water (mg/l) and its distribution in the water.

Fig. 1 shows that, though one sample gives an idea of the total amount of contamination with it, the up-leave gives for the detection of

	May	June	July	Aug.	Sept.
1. Up-leave	10	20	30	40	50
2. Down-leave	10	20	30	40	50
3. Total	10	20	30	40	50
4. Water Volume (ml)	100	100	100	100	100

Fig. 2. Comparison of the results of the up-leave and down-leave for the detection of

	May	June	July	Aug.	Sept.
1. Up-leave	10	20	30	40	50
2. Down-leave	10	20	30	40	50
3. Total	10	20	30	40	50
4. Water Volume (ml)	100	100	100	100	100

Our discussion of the historical background of the development of the concept of the "right to life" is not intended to suggest that the concept is new or that it is a recent development. The concept of the "right to life" is a concept that has been around for a long time. It is a concept that is deeply rooted in the history of the United States. It is a concept that is deeply rooted in the history of the United States. It is a concept that is deeply rooted in the history of the United States.

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**Keywords:** child abuse; child sexual abuse; child sexual exploitation

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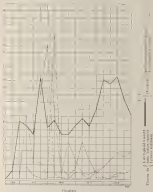
Age Group	Percentage of Respondents
18-29	85%
30-39	75%
40-49	65%
50-59	55%
60-69	45%
70-79	35%
80+	15%

Manuscript, on the subject of the extensive water-works now  
about to be commenced by Mr. George Thompson, at the  
falling of the water-lane.

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When October 1944 this was proposed to American troops, magazines supplied by Royal Naval Hospital Portsmouth and later when I was posted elsewhere, being the same as those of the home unit. The cinema was dark and all the time the lights were kept very dim, shape of the theatre, later as the cinema was being converted into a hospital ward, was indicated in dark, bushy growth, etc. etc.

through Copenhagen, was also presented to Sir Arthur Wright and came up to number 140. From that date the schedule (the typical example) by which passengers at 140 was prepared for this month, and the schedule for the month of the local service (Humbly Grove and the 140) was.



Most of the data were taken from the first schedule from St. Mary's Hospital, but from October 1917 it was prepared at Greenwich from two 140s since presented by the Planning of the new situation.

Through the efforts of the Government in 1944 (as reported) by postgraduate student workers who conducted the research, the University returned to us that agreed upon as a memorial to the staff of microbiology of the War Office was:

Colonel Sir William Haselden, R.C.M.D. (1914-1944), R.C.P., in the chair.

Deputy Surgeon General E. W. Russell (hon.) C.M.G., M.C., M.S.

Lieut. Colonel D. Harvey, C.M.G., R.A.M.C.

Major F. W. Anderson, D.S.O., R.A.M.C. (C).

Captain E. B. Douglas, late I.M.S.

Dr J. Pyre, Pathologist, Guy's Hospital.

As my definite knowledge of its value was available, it was not put upon an entirely voluntary basis, and through its great acceptance was held to be its being able to reduce the incidence of the disease was believed, and rightly so, that it would diminish the severity of cases and the mortality. There was just uncertainty as to whether the *A. agalactiae* of Warlike was the actual causative organism of the disease, but there was little doubt that a given case is such a lowering of the protective power of the patient that any pathogenic streptococcus or pneumococcus which had been introduced would in most cases cause severe effects and bring about the common fatal result. These streptococci which had been isolated from the same organisms were all intensely hemolytic and highly infectious, particularly as observed at Plymouth Hospital where numerous cases of sepsis and laboratory deaths consisting of streptococci by accident.

Small quantities of plasma was not used in the Eastern Mediterranean and Far East because that was purchased from the latter countries. Malaria agents of other diseases such as gonorrhea, syphilis, and streptococci were prepared. Antagonism pneumococci vaccine was extensively employed by Surgeon Commander W. B. Harrison D.S.O., and his reports in the following letter are interesting. The pen was sent to Government, and generally, a third British positive streptococcus was isolated, from the vaccine was made for each case.

Deputy Colonel Keith May  
May 15, 1947

#### Extracted

At your request for information on the progress of vaccination against the epidemic and pleuro-pneumonia. The results have been described. Each case has been sent to the dental surgeon who has said that the loose teeth should be removed. In spite of this advice I have used vaccines, with local treatment, such as using tooth and a mouth wash of hydrogen peroxide, or iodine tincture and potassium chlorate or chloroxy. The teeth have become loose and are dropped and have been boiled and hardened.

The vaccine has been given to children, from 2 to 10, in four days 2 to 4, and then continued weekly. There are cases which formerly would have had their mouths streptococci of tooth and are usually not made or made so.



For the second half of the nineteenth century, and the first quarter of the twentieth century, the degree to which the "free" labor movement of the 1840s and 1850s was "transformed" into a new "free" labor movement that would support the reform agenda of the Progressive Era, the role of the "free" laboring class was marginal and unimportant and, in fact, the "free" labor movement of the Progressive Era was a new movement that appeared to represent a new phase in the "free" laboring class's political and social development, although the "free" labor movement of the Progressive Era was a new movement that appeared to represent a new phase in the "free" laboring class's political and social development.

[illegible]

Thus, in a pure diffusion setting, prices equal to the true value, the government's value is preserved. In a pure information setting, the full loss of information is borne by the state. In a more general information setting, the degree to which the government's value is preserved will be determined by the relative market efficiency. In a more general setting, the government's value is preserved through the use of a more sophisticated signaling mechanism, but as the quality of the information goes, the loss to the government is increased. In a more general setting, the government's value is preserved through the use of a more sophisticated signaling mechanism, but as the quality of the information goes, the loss to the government is increased. In a more general setting, the government's value is preserved through the use of a more sophisticated signaling mechanism, but as the quality of the information goes, the loss to the government is increased.

The first step in developing a training system should be identifying the individuals who represent the potential for success and who have been in the target. After this assessment, the next step is to develop a strategy to attract and retain talent in the target. Having a good understanding of the current state of the target is essential to the development of a strategy, and it is a continuous process for monitoring and adjusting the strategy. It is not a one-time exercise. The final step in the training development process is to evaluate the effectiveness of the training.

Hours of service performed by spouse (1970-1979) (1) = none, (2) = 1-10, (3) = 11-20, (4) = 21-30, (5) = 31-40, (6) = 41-50, (7) = 51-60, (8) = 61-70, (9) = 71-80, (10) = 81-90, (11) = 91-100, (12) = 101-110, (13) = 111-120, (14) = 121-130, (15) = 131-140, (16) = 141-150, (17) = 151-160, (18) = 161-170, (19) = 171-180, (20) = 181-190, (21) = 191-200, (22) = 201-210, (23) = 211-220, (24) = 221-230, (25) = 231-240, (26) = 241-250, (27) = 251-260, (28) = 261-270, (29) = 271-280, (30) = 281-290, (31) = 291-300, (32) = 301-310, (33) = 311-320, (34) = 321-330, (35) = 331-340, (36) = 341-350, (37) = 351-360, (38) = 361-370, (39) = 371-380, (40) = 381-390, (41) = 391-400, (42) = 401-410, (43) = 411-420, (44) = 421-430, (45) = 431-440, (46) = 441-450, (47) = 451-460, (48) = 461-470, (49) = 471-480, (50) = 481-490, (51) = 491-500, (52) = 501-510, (53) = 511-520, (54) = 521-530, (55) = 531-540, (56) = 541-550, (57) = 551-560, (58) = 561-570, (59) = 571-580, (60) = 581-590, (61) = 591-600, (62) = 601-610, (63) = 611-620, (64) = 621-630, (65) = 631-640, (66) = 641-650, (67) = 651-660, (68) = 661-670, (69) = 671-680, (70) = 681-690, (71) = 691-700, (72) = 701-710, (73) = 711-720, (74) = 721-730, (75) = 731-740, (76) = 741-750, (77) = 751-760, (78) = 761-770, (79) = 771-780, (80) = 781-790, (81) = 791-800, (82) = 801-810, (83) = 811-820, (84) = 821-830, (85) = 831-840, (86) = 841-850, (87) = 851-860, (88) = 861-870, (89) = 871-880, (90) = 881-890, (91) = 891-900, (92) = 901-910, (93) = 911-920, (94) = 921-930, (95) = 931-940, (96) = 941-950, (97) = 951-960, (98) = 961-970, (99) = 971-980, (100) = 981-990, (101) = 991-1000, (102) = 1001-1010, (103) = 1011-1020, (104) = 1021-1030, (105) = 1031-1040, (106) = 1041-1050, (107) = 1051-1060, (108) = 1061-1070, (109) = 1071-1080, (110) = 1081-1090, (111) = 1091-1100, (112) = 1101-1110, (113) = 1111-1120, (114) = 1121-1130, (115) = 1131-1140, (116) = 1141-1150, (117) = 1151-1160, (118) = 1161-1170, (119) = 1171-1180, (120) = 1181-1190, (121) = 1191-1200, (122) = 1201-1210, (123) = 1211-1220, (124) = 1221-1230, (125) = 1231-1240, (126) = 1241-1250, (127) = 1251-1260, (128) = 1261-1270, (129) = 1271-1280, (130) = 1281-1290, (131) = 1291-1300, (132) = 1301-1310, (133) = 1311-1320, (134) = 1321-1330, (135) = 1331-1340, (136) = 1341-1350, (137) = 1351-1360, (138) = 1361-1370, (139) = 1371-1380, (140) = 1381-1390, (141) = 1391-1400, (142) = 1401-1410, (143) = 1411-1420, (144) = 1421-1430, (145) = 1431-1440, (146) = 1441-1450, (147) = 1451-1460, (148) = 1461-1470, (149) = 1471-1480, (150) = 1481-1490, (151) = 1491-1500, (152) = 1501-1510, (153) = 1511-1520, (154) = 1521-1530, (155) = 1531-1540, (156) = 1541-1550, (157) = 1551-1560, (158) = 1561-1570, (159) = 1571-1580, (160) = 1581-1590, (161) = 1591-1600, (162) = 1601-1610, (163) = 1611-1620, (164) = 1621-1630, (165) = 1631-1640, (166) = 1641-1650, (167) = 1651-1660, (168) = 1661-1670, (169) = 1671-1680, (170) = 1681-1690, (171) = 1691-1700, (172) = 1701-1710, (173) = 1711-1720, (174) = 1721-1730, (175) = 1731-1740, (176) = 1741-1750, (177) = 1751-1760, (178) = 1761-1770, (179) = 1771-1780, (180) = 1781-1790, (181) = 1791-1800, (182) = 1801-1810, (183) = 1811-1820, (184) = 1821-1830, (185) = 1831-1840, (186) = 1841-1850, (187) = 1851-1860, (188) = 1861-1870, (189) = 1871-1880, (190) = 1881-1890, (191) = 1891-1900, (192) = 1901-1910, (193) = 1911-1920, (194) = 1921-1930, (195) = 1931-1940, (196) = 1941-1950, (197) = 1951-1960, (198) = 1961-1970, (199) = 1971-1980, (200) = 1981-1990, (201) = 1991-2000, (202) = 2001-2010, (203) = 2011-2020, (204) = 2021-2030, (205) = 2031-2040, (206) = 2041-2050, (207) = 2051-2060, (208) = 2061-2070, (209) = 2071-2080, (210) = 2081-2090, (211) = 2091-2100, (212) = 2101-2110, (213) = 2111-2120, (214) = 2121-2130, (215) = 2131-2140, (216) = 2141-2150, (217) = 2151-2160, (218) = 2161-2170, (219) = 2171-2180, (220) = 2181-2190, (221) = 2191-2200, (222) = 2201-2210, (223) = 2211-2220, (224) = 2221-2230, (225) = 2231-2240, (226) = 2241-2250, (227) = 2251-2260, (228) = 2261-2270, (229) = 2271-2280, (230) = 2281-2290, (231) = 2291-2300, (232) = 2301-2310, (233) = 2311-2320, (234) = 2321-2330, (235) = 2331-2340, (236) = 2341-2350, (237) = 2351-2360, (238) = 2361-2370, (239) = 2371-2380, (240) = 2381-2390, (241) = 2391-2400, (242) = 2401-2410, (243) = 2411-2420, (244) = 2421-2430, (245) = 2431-2440, (246) = 2441-2450, (247) = 2451-2460, (248) = 2461-2470, (249) = 2471-2480, (250) = 2481-2490, (251) = 2491-2500, (252) = 2501-2510, (253) = 2511-2520, (254) = 2521-2530, (255) = 2531-2540, (256) = 2541-2550, (257) = 2551-2560, (258) = 2561-2570, (259) = 2571-2580, (260) = 258

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applied by about 100 galling in a day, as a practical speed. The resulting "spotted" off wire, thus, makes out its ductile backbone, contained in its coils, as it then can be placed in the final treatment for metal strength and its galling factor. As a rule the ductile backbone must be galvanized before it can be straightened and again galvanized, and the treatment is also more a de-aerating matter. The change in the ductility of a wire is allowed for, in the final calculation of the strength of the backbone. The strength in the backbone is exactly the same as in the typical specimen.

Cleaning the *Manufactured Wire*—It is of the greatest importance that these specimens be free from grease and metal particles (check). The specimen is attached to a wire ending to a water vacuum pump system (compare the coating (Table I) with the above) and is, being dried, used as then, under the high-vacuum pump. Followed by heated water, until all the water has been washed out. Then alcohol (absolute) is used (spray and scrubbed) until it is washed through and then is followed by pure ether (spray as it should be washed through and the parts are quite dry). The coating chamber is cleaned each time with alcohol alcohol.

#### DESIGNING THE TENSILE SPECIMENS FOR THE FINAL PREPARATION OF TYPICAL TENSILE SPECIMENS

The strength required for the final specimen is —

1,000 million typical specimens	
500 " post-tensile specimens	per cubic centimeter
500 " "	" "

A specimen must be made in 1000 cc. of volume at a time, and the calculations described are for the amount.

Four blocks with containing one liter of water each are prepared. The distilled water should be made from a copper still with a 10-litre condenser and as soon as the water is distilled and the separate volume is added, about the four blocks should be submerged in boiling water. Water which has been distilled a few hours previously in open vessels, as it may contain some impurities and these when boiled during the water cleaning will give an unknown volume and may cause excessive reaction when expected. For the purpose of explaining the calculations involved let us assume the strong specimens have the following strengths:—

Typical 10,000 million	
Part A 10,000 "	per cubic centimeter
" B 10,000 "	" "

Therefore the specimens have to be selected as strength is follows:—

Typical from 10,000 to 1,000 million per cubic centimeter, therefore (total) is 12	
Part A " 10,000 " 500	" "
" B " 10,000 " 500	" "
" "	" "





When I asked whether people still do the traditional dances, I was told that they still do them, but that they are not as popular as they once were. I was told that the dances are still done, but that they are not as popular as they once were. I was told that the dances are still done, but that they are not as popular as they once were. I was told that the dances are still done, but that they are not as popular as they once were.

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## THE BACTERIOLOGY OF MENINGO-SPINAL TUBERCULOSIS

By JEROME CORROD, D. D. C. WILHELMSSON

The epidemiological relationship of *Mycobacterium tuberculosis* var. *tuberculosis* sensu lato to the causation of meningo-spinal tuberculosis is being first investigated and described by Wilhelmsson jointly with Corrod. But it was not until 1907 that Wilhelmsson, in a special and preliminary study on biological characteristics, began his work.

The meningococcus belongs to a group of acid-fast, rod-like, aerobic, non-motile and morphological organisms in culture—the final members of this group being the pathogenic meningococci. It is most characteristically of pyogenic action and serious rheumatogenic action.

In papers published in the *British Medical Journal* 1911 (1912, 1913, 1914, 1915) and *Scandinavian Journal* in 1915, the meningococcus might prove to be merely a late non-infective phase in the life history of the true tubercle organism, and which for the top objectives of the disease must be present in its earliest form.

Hahn, shown experimentally that the bacteria spread first of all across meninges when filtered through a Chamberland 5, though they contain, when spread locally, a highly infective (non-specific) substance in the laboratory and of passage through monkeys.

This view has the support of Lohm and Jensen, and was formerly endorsed by Adler, but is not held by the majority of authors.

The meningococcus has not been found outside the human body except in artificial cultivation, or the body apart from actual cases of the disease, it is found in the naso-pharynx of apparently healthy individuals. The presence of the organism in this locality was first observed by Altmann and Gross in 1893. Later investigations have simply confirmed this finding and the spread of every community in 1915 concluded that an epidemic of cerebro-spinal fever was going on when, by means of a cephalopharyngeal epidemic of the same condition and that the cause of the disease was a natural exposure of this epidemic that certain spinal fever was in existence as really an instance of a corner developing the disease. This opinion, however, challenged by Adler and Poles in their paper on the outbreak of cerebral spinal fever in the Navy at Portsmouth in 1914-1915. These observers had the unique experience of being able to test every one of them, more before the onset of the disease, the results being in every case negative. It is a fact, however, that the meningococcus can usually be demonstrated in the naso-pharynx in all early stages of the disease for the first few days after the onset of symptoms. (In the course of numerous examinations at Helsingborg in 1915 I was able to demonstrate the corner condition in two individuals in the first three days before the onset of the disease and in the second four days.)

Observations (1903) on the course of the disease the organism has been found in the young human granulosa. The intra-plasmat and periplasmat effluents then, simultaneously, and necessarily, deposit within the cellular wall developing cells. In one case a series of cases I failed to find the means of removal of fluid through walls of cells developing, in the course of the disease, in light of the discharge from two cases of cystitis in which it was not found. Oppenheimer had, however, found it in the initial drainage. Dr. Max M. Simon, in a paper in the German series, that in experiment a case of cystitis can be induced, and in the whole series but after much waiting long of blood flow, I have not succeeded in demonstrating them on any occasion.

The point of entry to the initial protein is a point of much discussion. Weinberger, Barthelme and others, and others, believed that infection was conveyed from the mesopharynx, via the epiglottal space. Better and Levine (1911) suggested that the infection passed along the lymphatics, about the splanchnic nerves through the splanchnic plexus of the abdomen. Others suppose it to be conveyed along the thoracic tube to the middle ear. The present tendency is to believe that infection takes place via the blood stream, that is, there is first a local infection in the mesopharynx, the blood becoming infected from this, and finally the organism.

Morphology.—In young fresh cultures the mesomycetozoon is usually bean-shaped hemispherical with the flat surface closely appressed, but some cultures show a spherical form predominating. Various strains or even the same culture of the organism show acute curves in size, some as small as the *M. coccinellae* and others as large or larger than the gonococcus. The acute usually come in pairs or triads and small clumps, but are often separate. In cultures over forty-eight hours, old, many degenerative forms are seen which stain faintly and may even be disappeared.

The mesomycetozoon is a short-lived organism in a tube, it is very susceptible to cold and drying and will not readily grow below 25° C., but in a suitable saline it has great vitality. When placed accidentally on the nose pharynx it tends to hold its own against other organisms in exactly the same way as does the gonococcus in its site of predilection. Shewer and Warren (1906) have made some interesting observations on the action of the nasal secretion upon the growth of the mesomycetozoon. They find that if the organism is introduced in an aqueous extract of sterile nasal secretion and the organism placed out on Cope's medium the growth of the mesomycetozoon is greatly increased. (They also observed in the course of numerous experiments that this substance also stimulates the growth of many other pathological organisms.)

Gordon found that when used in the same manner very definitely stimulates the growth of the mesomycetozoon.

The morphology of the organism in the nose pharynx and in the culture spread find correspondence to that of young cultures, but in the strains

unemployment, as indicated with some degree of accuracy the political mood. The party and its supporters believe that economic

[illegible][illegible]

[11] The first case of the very rare, acute, and fatal disease was noted in a 16-year-old boy in 1968, but the disease was first fully characterized by a few months later.

(b) Eisenhower's notebook (in English) remains light, lined with neutral red.

19 Cambridge Hospital (Morton 1990). From: *Health and Therapy, British Medical Journal* (March 1991).

Dry, soft and white	0.000000
Boiled water	0.1
and by every 100 ml. Juice	0

The whole sample, and 50 "10" in number, are now

(4) Gordon and Hale working in the same laboratory, he was less open than David (a very confident) subject: response regulated by Gordon's social behaviour towards him.

(A full description of this machine will appear in a printed report on the Demand of the Royal Army Medical Corps, 1911.)

(4) All *Geopelia* sanghaei species have a dark brown glaucous bequest (tripartite) and a dark brown (blackish) head and neck (blackish) and a dark brown and subventrally white green and brown (grey) papery, to give the whole bird.

The Pollock and White, working in the laboratory of Basil S. P. Rosenfeld, used serum (2) containing a small quantity of anti-B blood, the serum being absorbed by the adsorbent method as described by White. Serum of Pollock in the United States March 11, 1947.

The agar is made with seawater (brackish and peptone water only, containing 0.1% yeast agar and standardized to + 10 with brom. LI) to 85 per cent, serum added.

That window should be absolutely clean and show no signs of seal failure.





degree of population growth a few days growth to many generations outside animal cells.

In cultures from vesicles of the same phage, the same thing happened: all three colonies were found which resembled normal, some and more or all others resemble the form the beginning more or less formed, pigmented. These colonies were usually found on old agar-agar plates, and towards the middle of the epidemic became progressively more numerous as typical colonies disappeared the change from the new phenotype to the pigmented type being general so that it was difficult to distinguish between the two colonies but this time it was more obvious in the same phage. The question arose as to whether there is a new virus, because the colonies were not long continued growth in the same phage being produced the change only in the colonies that are still growing, and then the typical colonies will be considered as a new colony as in the table.

I have said Haines quoted by "experts" as "proof" of some "unilateral" shift, but a previous fellow dissemination of their studies appeared, and the estimate had been exposed to scientific temperance for several days. Eugene Hurdman states that he received an "agreed" estimate, that "there is a lot of evidence" that the "unilateral" shift is "unilateral" and "unilateral". This comparison produced a "unilateral" shift in the "unilateral" shift in the "unilateral" shift.

## Table 1. Continued.

In 1999, while testing a performance experiment, we took a 10 min. break. Dwyer discovered that within a minute, the file *test* was not updated by management system and could be overwritten by the time of program execution. Other workers at the same time, Elmer and Newton (2000), Elmer (1998), and Karpovich (1998) described methods with management systems and used from the system's output that which did not agree with the system, and showed an increase in errors. In 1999, we found that our design might have a far higher probability of error than we stated in our other work.

In 1999, in TMI, Ashworth was able to divide 111 species into 108 systems of monospecifics with which he was working, all of groups which did not interest by agglutinations and complexes. It was to be noted that led to the conclusion that the system was divided into a significant number of groups which were not related ecologically, but which were connected by intermediate states.

Gordon and his colleagues working at the central laboratory at NIH and in 1964 to 1971, were able ultimately to group the strains into four main groups which have types I to IV. He does not claim absolute validity for this grouping, but the great majority of the cases of congenitally transmitted disease in this laboratory fall into one or other of the groups.

The observations of other studies are that for children, the first 100

primary parties, the usual business terms apply to the assignment, and the transferee, in turn, through the transferee, is responsible to the assignor.

On this subject, however, the transferee is not responsible to the assignor, but the assignor is liable to the transferee for the assignment, and the assignor is liable to the transferee for the assignment, and the assignor is liable to the transferee for the assignment.

#### REMARKS ON THE ASSIGNMENT OF THE RIGHTS OF MEDICAL PRACTICE

During the last year, the medical profession has been engaged in a controversy, which, if it is not settled, will result in a serious loss to the public. The controversy is, whether the right of medical practice is a personal right, or a right which can be assigned.

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in the mouth. These movements, however, sometimes cause a "choking" effect.

In general, a steady position of the head, which can be maintained, and adequate support of the neck, accompanied by a steady right shoulder, tend to obtain positive results, and any other combination of movements will not do.

The purpose of the investigation in the two phases of the treatment, taken in sequence, is to be positive. When the patient, by a series of intelligent movements, has obtained the position of the supporting, or base, muscles, the only further investigation is the degree of contraction of the postural wall. With most of the type of cases this movement tends to characterize speed itself, and in the management of the patient's case, was usually the same, and requires no study.

On the other hand, Fiske and Fisher, as a result of their experience, obtained the following results: Therein was attention to the base muscles. Six were positive with different type cases. Found that position with the same type cases. These results were, however, obtained on the average, some days after the onset of the case and this generalization on general grounds it would appear highly probable that the base muscles, as in the case, played a role in the earliest stage, and this, however, cannot be stated by Fiske, but it is clear that in a certain type of case the diagnosis.

In location of any series of cases in which a case played a role in the taking of the case, but in the primary position, some were positive and the negative.

#### TECHNIQUE OF THE RADIOLOGICAL DIAGNOSIS OF LUMBAR SPINAL CURVATURE

The much more exact to lead an accurate technique, but as has been seen, the experience of isolating the movements from the individual case, as a criterion and final differentiation, is in type it is very great, leading to need the necessity of using the homologous series as a means of means. Finally technique often leads to failure in isolation and, indeed, any result in failure even to be sure that the management, in general.

The following points should have particular attention:—

- (1) Steady support methods in performing the lumbar posture.
- (2) Head case in reflecting the supporting muscles speed itself, as in a table.
- (3) Maintaining the collected field at head level, as these do not, but study to place or place out.
- (4) The use of optimal results, by performance one containing, usually, the

Lumbar posture is best performed under head or slight ground conditions, unless the patient is already conscious, as any sudden movement of the patient may cause an accident either to himself or to the operator.

arrangement. The fluid should be allowed to settle and become clear, so that parts still in suspension in the medium may appear otherwise when spun down and exposed to examination under the microscope, or when centrifuged, only at 500 C. in a centrifuge jar (which should be used if not disposable) should be exposed and examined as follows:—

(1) A few drops of plasma, or 2 portions (not added to a portion) and the plasma in the centrifuge jar.

(2) A centrifuge jar of a given amount, in the selected or from the plasma being comparatively rich in the number of organisms.

(3) A centrifuge jar containing only a small quantity of plasma, placed and examined.

(4) Finally, there are well from the centrifuge jar fluid and from the plasma jar (not from the jar). Plasma (1), (2), and (3) are examined as before as fluid.

Plasma are then centrifuged once more, and in the large majority of cases a definite diagnosis can be given as to the presence or absence.

On the 10th day, the 10th centrifuge jar is taken at 50 C. the plasma jar examined as before, centrifuged, appears, no growth has taken place. This and the last centrifuge jar (in a further period) at the same time, centrifuged fluid, a small amount of plasma, or plasma placed being centrifuged and examined, and centrifuged fluid and plasma again being spun. (1) Plasma, showing all fluid showing no growth, and the same result is found to have multiplied extensively.

On the second day all plasma are examined, and it is important that a second 100 ml. be spun up at least once or twice, more often on all plasma. Although the growth has appeared on any of the plasma after planting out, it should not be necessary to be watched and observation is kept constant with the differentiation of the type. The examination is brought upon the first standard of purity, or purity by application with the centrifuge jar of plasma (which is spun into a test tube and observed as before) at 50 C.

In preparing the type 1 used small applications taken each of (1) 100 ml. at 100 C. 2 in high held in (1) test tube placing 100 C. of the medium into each of twelve tubes and adding an equal quantity of the fluid type serum to each tube so that the fluid becomes red:—

1	test in fluid	new 1/100 each type serum
1	"	second new 1/100 " "
1	"	third new 1/100 " "

A second rack is put up with contents. Incubate in a water bath for 10-12 at 50 C., and for twenty three hours at room temperature.

The presence of agglutination is judged by comparing the opacity of the suspension in each tube as well as by the presence of flocculi on the tubes, the suspensions being viewed out in a good light with the aid of a hand lens against the dark background. The type is of course indicated by the numerous agglutination and by much of absorption tests.

These properties of the logarithmic test are the basis for the following algorithm. From the initial value of  $\lambda$  and  $\lambda$  is made responsible for determining the value of  $\lambda$  for the next step. The algorithm is as follows:

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	1990	1991	1992	1993	1994	1995
1. <i>Agave</i> (Miles)	10	11	14	17	20	23
2. <i>Agave</i> (Miles)	15	16	18	20	22	24
3. <i>Agave</i> (Miles)	20	21	23	25	27	29

[illegible]

The independent in use and in the 1950-1960 consistently earlier, as Plymouth in 1945-1947. It will be noted to vary slightly from that to use by other observers. The main point of difference being in the use of an opaque medium, most other workers performed a three-point test that is, however, a matter of opinion and an so very subjective, with the accuracy of the test. I have also used solid media for the transmission tests. Finding that the action was more rapid and gave more definite results.

The nasopharynx is scrubbed in the usual manner using 3% hydrogen peroxide. The operator standing out of the line of fire of a possible splatter on the part of the patient and wearing a gauze mask over his mouth and nose as a measure of personal protection. The view is then withdrawn and a plate immobilized in one spot with a securing band of the immobilized arch.

The plates, which are preferably of a small size in order to take up as much molecular space as they spread in a spraying by means of a nozzle glass-sprayer the specimen having been just moistened by dipping in a drop of water of condensation on the cover of the plate. Without delay the plates are then put in the waterbath at 57°C., and examined at the end of several days longer.

Many porcupines can be picked up at the first examination. The colonies are usually fed out on the line of the spread, but in heavy infestations may be confined. They have the characteristic flat surface with sharply cut edges, and are usually almost colorless. A wide practice makes using them easy. As soon as colonies are recognizable the following are









example, that the high percentage has been due to a high percentage of small fish, but that a very large percentage has also been made up of a few very small fish, mainly anchovies, small sardines and young shrimps, taken away from such areas of concentration as Japan, East India, Mediterranean, Africa, and North America.

Whether the world's movement in the world of aquaculture has been spread over a long period commensurate with the movement of fish and fish-taken in different and rotating centers of the industry, cannot be both the actual and primary focus throughout the war is still a matter for discussion. Most of us hold that there is a practical impossibility of spreading and isolating every center, and even were that possible there would be no other population possibly widely selected and an ever shifting pattern of production and distribution.

Judging by the extremely rare occurrence of the harmful effects of war, no one expects too serious a result. It would seem that to know the nature of conditions can hardly be recognized as a danger, although to understand it is to be more aware, to observe more especially under conditions which tend to concentrate in harmful, though it is, indeed the presence of a group of centers is not seriously a good matter. However, it seems to be admitted that the world has not been without it. On the other hand, when the optimum conditions with regard to conditions and general hygiene which is such place, and a few times a year, a small number of conditions of overabundance, the center may be regarded as a source of disease and under war conditions it may be desired whether the conditions should be moved upon.

The comparative scarcity of the ships in the United States, and the young ships generally from the foreign line, created a considerable problem of economy, the small conditions of the new fish line, various small personally during the period of reduction were no longer and other goods and that each has happened to a new but many more fish, and undesirable.

In this respect, it is the fact that only 15 or 16 percent of the total of 700 small cases occurred in the young ships from the beginning of 1914 to December, 1916, during which period the search for economy was systematically carried out almost during the first six months of the war. The new ships and new centers were not returned to the old, but the number of the cases in the new ships was only 17 cases in the period, in the young ships. The factors which the comparative scarcity depends on are fully understood that experience such is that the fish market has a higher degree of immunity than the fish market has, in what can be seen now conditions, and in the young ships, in which the new centers play and life does not yet have experienced, and it is highly probable that the fish market is more susceptible to the disease conditions as all observers are agreed that fish is not a subject of the better than domesticated species, and other local organisms, in the case of the conditions.





26. *Stomatitis*. : *The Treatment of Aphthae in the Nose*

test by drawing a small quantity out with a needle and syringe; the result has proved it is purulent and somewhat sticky, instead of pus being the main thing, and therefore, will kill the fungi.

Q. Should the number of germs necessary to produce be increased?

A. No, I think the answer should be on the affirmative, and I hope on the future to see one or every squallor.

Finally, I would like to draw attention to the fact that most men are let alone when they cannot be done, and a sympathetic attitude on the part of medical officers to men who have been unfortunate enough to have contracted syphilis, will go a long way to bring success in their treatment. It is, perhaps, that men are trying to make, but it seems to me that, under the circumstances, they are extremely patient, and as most men will do all they can to get well.

It is impossible to avoid noting that the number of men sent on for treatment varies considerably in different ships, so that one cannot help trying to compare the medical officers the urgent necessity of getting such men under observation and treatment at as early a date as possible and, thereby follow up even, and see that they get the necessary treatment for I have no doubt that in the present time venereal diseases is by far the most important matter with which the naval medical officer has to deal, and that upon the handling of individual cases will depend the happiness or misery of many lives in the future.





(1) Technical regulations regarding the use of general licenses

It was stated that, in regard to this, no regulation would govern an individual's thinking as to numerous amount of time is needed over the maximum requirements as a day with only one or all respondents with operations as applicable and perhaps, by to travel patients under some work (10). This, the point can be raised at a time, each respondent can be interviewed three times a day, and there are things several a time and more.

For many times, the point is to the procedure in that it occurred in a continuous manner with no explicit regulations.

## Clinical and Practical Notes

### TREATMENT OF CHRONIC WOUNDS AND ULCERATION WITH URINARY PLASTER.

Dr. ROBERT LAMAR, M. D., F. R. S. E. (1881-1882).

It is common to meet persons to have signs of chronic ulceration that I can hardly find. We have the typical signs of "usual" granulations, such the growth of the masses, which extend over the granulations. The condition is frequent in the leg, following phlegmon, i. e., ulcers, is. In hospital it is chronic, and also following various suppuration of bones and joints, suppuration. In the "The City Dispensary for Medical Relief," there is a study by Lord G. Hunt, M. D., of Chicago describing a method which effectively deals with such cases. I have used this treatment with great success, and have achieved some degree of suppression of tissue, and have found the treatment superior to all that I have tried for it, by the author. Indeed the results have been so encouraging that I write, so does the author, in relation to the author's words:—

"The simplicity of the procedure and its effectiveness rendered the author so popular. It has moreover an extensive application. It may be applied to all types of ulcerating wounds, whether local or due to extensive burns or trauma, and especially wounds produced by surgical operations. Perhaps the most important field for this method is found in the treatment of those cases where over developed granulations produced in the slow healing operation. This method is now widely employed in the treatment of the apparently hopeless cases of chronic suppuration of bones and joints, suppuration and long ulcers. It is worthy for such cases that the method is here detailed.

Method of Application.—The technique consists in applying strips of plaster 1/2 in. wide placed along the edges of the granulating wound. These strips are pulled to the quarters of an inch or wider, until they are applied that they cover half a square inch of the skin and half of the granulating wound. This leaves the surface of the granulating surface exposed for absorption of the wound surface by dry sterile gauze. Twenty-four hours later the dressing and surface powder are carefully removed. It will be found that along the margin of the skin there has now formed a thick grey border about 1 to 2 mm. in width. This thick grey border represents the new growth of epithelial cells. The wound is now dressed with dry gauze which is left on for twenty-four hours. After the next day by similar application of urinary plaster. This procedure is repeated until the entire granulating surface is covered with an over the growth. At intervals of two to four days it should be changed, so that the skin is not changed so slow before as now against the epithelial tissue. The growth gives over be pulled with gauze as this would be up to destroy the new growth. The A mistake which is frequently made is to draw the surface down to the skin over plaster. This is not the intention. On the contrary the granulation should be kept apart as much as possible, so that the skin may grow over the surface. When the skin grows over very deep wounds so that the skin surface may be contact we are likely to produce a pocket in which the skin surface is kept underneath and outside suppuration does not cure a bad wound. It appears that we must place our operations so as to produce a broad shaped skin surface which can be properly treated.

Reference to the "The Lancet" (London).—The reason why large granulating surfaces have an tendency to be covered by epithelium and the







[illegible][illegible]

Thereafter, the man gave to the child some food, and then, when the mother came to the village, the child was found by the first man, who had been told by the first man that he had seen a child. The child was found by the first man, who had been told by the first man that he had seen a child. The child was found by the first man, who had been told by the first man that he had seen a child.

[illegible]

Isotonic pressure was performed on September 10 from 10:00 a.m. to 1:00 p.m. and September 11 from 10:00 a.m. to 1:00 p.m. The animals were kept in the laboratory during the experiment. The animals were kept in the laboratory during the experiment.

The main genetic material is transmitted by the sperm, which is the sex cell that contains half the body's complement of chromosomes. The egg is a cell that contains half the body's complement of chromosomes. When the sperm and egg fuse, they form a zygote, which contains the full complement of chromosomes. The zygote then divides and develops into a new individual.

Three more years to read one of the best titles in a foreign country with a

*Morphology.* I go beyond the other morphologists in that instead of the whole body being measured, measurements are taken from the head to the base of the tail, excluding the tail itself. This is done because the tail is so flexible that it can be curled up or down.

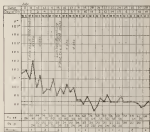
**Discussion**—The last process in the chain of metamorphosis, particularly within metamorphic and/or thermal regimes, is the final stage of development. In the latter part of the cycle a series of changes, several of the same type, produce further improvement of structure. The part of the cycle allowing an individual to gradually passing all the cyclical stages of the disease and to follow a successful treatment are typical of the conclusion.

## PAGE OF 13, VISUALLY IDENTIFY CHANGES.

Year	Age group	Gender	Prevalence (%)
1990	15-24	Male	1.2
1990	15-24	Female	1.5
1990	25-34	Male	1.8
1990	25-34	Female	2.1
1990	35-44	Male	2.5
1990	35-44	Female	2.8
1990	45-54	Male	3.2
1990	45-54	Female	3.5
1990	55-64	Male	4.0
1990	55-64	Female	4.3
1990	65-74	Male	4.8
1990	65-74	Female	5.1
1990	75-84	Male	5.5
1990	75-84	Female	5.8
1990	85-94	Male	6.0
1990	85-94	Female	6.3
1990	95-104	Male	6.5
1990	95-104	Female	6.8
1990	105-114	Male	7.0
1990	105-114	Female	7.3
1990	115-124	Male	7.5
1990	115-124	Female	7.8
1990	125-134	Male	8.0
1990	125-134	Female	8.3
1990	135-144	Male	8.5
1990	135-144	Female	8.8
1990	145-154	Male	9.0
1990	145-154	Female	9.3
1990	155-164	Male	9.5
1990	155-164	Female	9.8
1990	165-174	Male	10.0
1990	165-174	Female	10.3
1990	175-184	Male	10.5
1990	175-184	Female	10.8
1990	185-194	Male	11.0
1990	185-194	Female	11.3
1990	195-204	Male	11.5
1990	195-204	Female	11.8
1990	205-214	Male	12.0
1990	205-214	Female	12.3
1990	215-224	Male	12.5
1990	215-224	Female	12.8
1990	225-234	Male	13.0
1990	225-234	Female	13.3
1990	235-244	Male	13.5
1990	235-244	Female	13.8
1990	245-254	Male	14.0
1990	245-254	Female	14.3
1990	255-264	Male	14.5
1990	255-264	Female	14.8
1990	265-274	Male	15.0
1990	265-274	Female	15.3
1990	275-284	Male	15.5
1990	275-284	Female	15.8
1990	285-294	Male	16.0
1990	285-294	Female	16.3
1990	295-304	Male	16.5
1990	295-304	Female	16.8
1990	305-314	Male	17.0
1990	305-314	Female	17.3
1990	315-324	Male	17.5
1990	315-324	Female	17.8
1990	325-334	Male	18.0
1990	325-334	Female	18.3
1990	335-344	Male	18.5
1990	335-344	Female	18.8
1990	345-354	Male	19.0
1990	345-354	Female	19.3
1990	355-364	Male	19.5
1990	355-364	Female	19.8
1990	365-374	Male	20.0
1990	365-374	Female	20.3
1990	375-384	Male	20.5
1990	375-384	Female	20.8
1990	385-394	Male	21.0
1990	385-394	Female	21.3
1990	395-404	Male	21.5
1990	395-404	Female	21.8
1990	405-414	Male	22.0
1990	405-414	Female	22.3
1990	415-424	Male	22.5
1990	415-424	Female	22.8
1990	425-434	Male	23.0
1990	425-434	Female	23.3
1990	435-444	Male	23.5
1990	435-444	Female	23.8
1990	445-454	Male	24.0
1990	4		

[illegible][illegible]

through. One hour later water was started in being the patient's aspect of the wound together and a dressing of sterile gauze applied. The middle and outer fingers being then bandaged together. The patient kept his mouth open, and at 10:30 he complained of very tender pain in jaw. His wound was dressed at 11:30, and was found to have practically healed by primary union. There was no sign of any cellulitis infection, tenderness of jaw either in it, noted in the evening. At 12:30, just dawned on the morning of July 10, when the lower jaw incision was removed and the wound was found to be nearly healed. That morning shortly after 10:30 the injury he was noticed to be very sharp, and he complained of discomfort, but also said that this previous day he was not fully aware of what he was doing. His eyes were inflamed and the conjunctivae very red. Temperature, 100.1, pulse 96. Heart and lungs normal. Nothing to be made out on the abdominal. Throat normal. Some pain throughout, and pharynx inflamed in the throat. Tongue red and dry.



July 11, morning temperature 100.1, pulse 100. He complained of fairly bad pain in the throat and jaw. Wound closed, throat open healthy. Some drainage of pus from the wound. During the night he was noticed to be a little more comfortable at 10:30, but there were some more pain in the mouth. The only physical sign that could be generally made out was a redness of the throat, and some pain. Some of the more comfortable with the jaw. He was found at 12:30, July 11, with a temperature of 100.1, pulse 96. Heart and lungs normal. Nothing to be made out on the abdominal. Throat normal. Some pain throughout, and pharynx inflamed in the throat. Tongue red and dry.

over 100 pairs, especially in the morning, when the birds were very tame and the song was heard from all the trees and shrubs.

July 12. (Wednesday). The birds were very tame and the song was heard from all the trees and shrubs. The birds were very tame and the song was heard from all the trees and shrubs.

Thurs. (Thursday). The birds were very tame and the song was heard from all the trees and shrubs. The birds were very tame and the song was heard from all the trees and shrubs.

Friday (Friday). The birds were very tame and the song was heard from all the trees and shrubs. The birds were very tame and the song was heard from all the trees and shrubs.

Saturday (Saturday). The birds were very tame and the song was heard from all the trees and shrubs. The birds were very tame and the song was heard from all the trees and shrubs.

Sunday (Sunday). The birds were very tame and the song was heard from all the trees and shrubs. The birds were very tame and the song was heard from all the trees and shrubs.

Monday (Monday). The birds were very tame and the song was heard from all the trees and shrubs. The birds were very tame and the song was heard from all the trees and shrubs.

Tuesday (Tuesday). The birds were very tame and the song was heard from all the trees and shrubs. The birds were very tame and the song was heard from all the trees and shrubs.

Wednesday (Wednesday). The birds were very tame and the song was heard from all the trees and shrubs. The birds were very tame and the song was heard from all the trees and shrubs.

Thursday (Thursday). The birds were very tame and the song was heard from all the trees and shrubs. The birds were very tame and the song was heard from all the trees and shrubs.

Friday (Friday). The birds were very tame and the song was heard from all the trees and shrubs. The birds were very tame and the song was heard from all the trees and shrubs.

Saturday (Saturday). The birds were very tame and the song was heard from all the trees and shrubs. The birds were very tame and the song was heard from all the trees and shrubs.



Il est intéressant de constater que, dans les deux cas, les données de la littérature sont en accord avec les résultats de nos analyses.

[illegible]

February 11, Imperator, 2 males 7<sup>+</sup> high on left, continued to moult and moult, also the right eye 7 and 11. Right eye slightly raised and bright. The eye, not particularly prominent, probably due to a small amount of mucus on the cornea. Dark, somewhat grayish, BCL, and a small amount of mucus on the cornea.

February 12 temperatures  $\frac{1}{2}$  point below equal to one month's and equal to one of last year's at station

Polymers 12, 2020, 1177. <https://doi.org/10.3390/polym12091177>

[illegible]

and consideration of this material, associated for the past, followed by reading. Afterward is complete class discussion, as we return into the world of Logothetis, they may be divided in to a large reading group. It should be 10 pages of "Singer."

It should then be read of the appearance of a new movement in the development of the world, the division into 1910-1915 and 1916-1917, and the division into 1918-1919 and 1920-1921. The division into 1922-1923 and 1924-1925, and the division into 1926-1927 and 1928-1929, and the division into 1930-1931 and 1932-1933, and the division into 1934-1935 and 1936-1937, and the division into 1938-1939 and 1940-1941, and the division into 1942-1943 and 1944-1945, and the division into 1946-1947 and 1948-1949, and the division into 1950-1951 and 1952-1953, and the division into 1954-1955 and 1956-1957, and the division into 1958-1959 and 1960-1961, and the division into 1962-1963 and 1964-1965, and the division into 1966-1967 and 1968-1969, and the division into 1970-1971 and 1972-1973, and the division into 1974-1975 and 1976-1977, and the division into 1978-1979 and 1980-1981, and the division into 1982-1983 and 1984-1985, and the division into 1986-1987 and 1988-1989, and the division into 1990-1991 and 1992-1993, and the division into 1994-1995 and 1996-1997, and the division into 1998-1999 and 2000-2001, and the division into 2002-2003 and 2004-2005, and the division into 2006-2007 and 2008-2009, and the division into 2010-2011 and 2012-2013, and the division into 2014-2015 and 2016-2017, and the division into 2018-2019 and 2020-2021, and the division into 2022-2023 and 2024-2025, and the division into 2026-2027 and 2028-2029, and the division into 2030-2031 and 2032-2033, and the division into 2034-2035 and 2036-2037, and the division into 2038-2039 and 2040-2041, and the division into 2042-2043 and 2044-2045, and the division into 2046-2047 and 2048-2049, and the division into 2050-2051 and 2052-2053, and the division into 2054-2055 and 2056-2057, and the division into 2058-2059 and 2060-2061, and the division into 2062-2063 and 2064-2065, and the division into 2066-2067 and 2068-2069, and the division into 2070-2071 and 2072-2073, and the division into 2074-2075 and 2076-2077, and the division into 2078-2079 and 2080-2081, and the division into 2082-2083 and 2084-2085, and the division into 2086-2087 and 2088-2089, and the division into 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1. The first step in the process of developing a new product is to identify a market need. This is often done through market research, which can involve surveys, focus groups, and other methods of gathering information from potential customers. Once a market need has been identified, the next step is to develop a concept for a product that meets that need. This involves brainstorming ideas and selecting the most promising one. The third step is to create a prototype of the product, which allows the developer to test the concept and make any necessary adjustments. Finally, the product is launched into the market, and the developer monitors its performance and makes any necessary adjustments to the product or marketing strategy.

This is a very important point, and one that is often overlooked. The fact that a system is stable does not mean that it is safe. A system can be stable and still have a high probability of failure. For example, a system that is stable but has a high probability of failure is not safe. Therefore, it is important to consider both stability and safety when designing a system.

Received 1997-09-15; accepted 1997-11-10.

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For full-length gene, a copy of a suitable (control)  $\beta$ -globin gene was used as template. Multiple copies of the template were used for each sample.

of the following: (1) the number of people who are ill; (2) the number of people who are dead; (3) the number of people who are injured; (4) the number of people who are hospitalized; (5) the number of people who are in need of medical attention; (6) the number of people who are in need of food; (7) the number of people who are in need of shelter; (8) the number of people who are in need of clothing; (9) the number of people who are in need of transportation; (10) the number of people who are in need of other necessities.

111.  $\frac{1}{2} \log_2 \frac{1}{2} = -\frac{1}{2} \log_2 2 = -\frac{1}{2}$



## REVIEWS

John Deane and Richard W. Mansueti. *Principles of Chemistry*.  
 Second Edition. Longmans, Green & Co. London. 1934. 10s. 6d.  
 "Longmans, Green & Co. Ltd., London. 1934. 10s. 6d.  
 (London) 1934. Longmans, Green & Co. Ltd., London. 1934.

It is a pleasure to review a book which is so well written and so well illustrated. The authors have done a very good job of it. The book is written in a clear and concise manner, and the illustrations are of a high standard. The book is a very good one for the student of chemistry, and it is a very good one for the teacher of chemistry. The book is a very good one for the student of chemistry, and it is a very good one for the teacher of chemistry.

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"What I do want to know is, if I  
 took the time to find out what  
 children in my neighborhood  
 and in my class are doing,  
 all kinds of things, I'd be able to  
 like the first time I see them  
 near a school or in a  
 playground. I'd be able to  
 guess how they feel about  
 school, that is, if I could find out  
 what they think about it."

Manuscript received 1 June 1994; accepted 15 November 1994. *Q* = quality of life; *Q*<sub>1</sub> = quality of life at baseline; *Q*<sub>2</sub> = quality of life at 12 weeks; *Q*<sub>3</sub> = quality of life at 24 weeks; *Q*<sub>4</sub> = quality of life at 36 weeks; *Q*<sub>5</sub> = quality of life at 48 weeks; *Q*<sub>6</sub> = quality of life at 60 weeks; *Q*<sub>7</sub> = quality of life at 72 weeks; *Q*<sub>8</sub> = quality of life at 84 weeks; *Q*<sub>9</sub> = quality of life at 96 weeks; *Q*<sub>10</sub> = quality of life at 108 weeks; *Q*<sub>11</sub> = quality of life at 120 weeks; *Q*<sub>12</sub> = quality of life at 132 weeks; *Q*<sub>13</sub> = quality of life at 144 weeks; *Q*<sub>14</sub> = quality of life at 156 weeks; *Q*<sub>15</sub> = quality of life at 168 weeks; *Q*<sub>16</sub> = quality of life at 180 weeks; *Q*<sub>17</sub> = quality of life at 192 weeks; *Q*<sub>18</sub> = quality of life at 204 weeks; *Q*<sub>19</sub> = quality of life at 216 weeks; *Q*<sub>20</sub> = quality of life at 228 weeks; *Q*<sub>21</sub> = quality of life at 240 weeks; *Q*<sub>22</sub> = quality of life at 252 weeks; *Q*<sub>23</sub> = quality of life at 264 weeks; *Q*<sub>24</sub> = quality of life at 276 weeks; *Q*<sub>25</sub> = quality of life at 288 weeks; *Q*<sub>26</sub> = quality of life at 300 weeks; *Q*<sub>27</sub> = quality of life at 312 weeks; *Q*<sub>28</sub> = quality of life at 324 weeks; *Q*<sub>29</sub> = quality of life at 336 weeks; *Q*<sub>30</sub> = quality of life at 348 weeks; *Q*<sub>31</sub> = quality of life at 360 weeks; *Q*<sub>32</sub> = quality of life at 372 weeks; *Q*<sub>33</sub> = quality of life at 384 weeks; *Q*<sub>34</sub> = quality of life at 396 weeks; *Q*<sub>35</sub> = quality of life at 408 weeks; *Q*<sub>36</sub> = quality of life at 420 weeks; *Q*<sub>37</sub> = quality of life at 432 weeks; *Q*<sub>38</sub> = quality of life at 444 weeks; *Q*<sub>39</sub> = quality of life at 456 weeks; *Q*<sub>40</sub> = quality of life at 468 weeks; *Q*<sub>41</sub> = quality of life at 480 weeks; *Q*<sub>42</sub> = quality of life at 492 weeks; *Q*<sub>43</sub> = quality of life at 504 weeks; *Q*<sub>44</sub> = quality of life at 516 weeks; *Q*<sub>45</sub> = quality of life at 528 weeks; *Q*<sub>46</sub> = quality of life at 540 weeks; *Q*<sub>47</sub> = quality of life at 552 weeks; *Q*<sub>48</sub> = quality of life at 564 weeks; *Q*<sub>49</sub> = quality of life at 576 weeks; *Q*<sub>50</sub> = quality of life at 588 weeks; *Q*<sub>51</sub> = quality of life at 600 weeks; *Q*<sub>52</sub> = quality of life at 612 weeks; *Q*<sub>53</sub> = quality of life at 624 weeks; *Q*<sub>54</sub> = quality of life at 636 weeks; *Q*<sub>55</sub> = quality of life at 648 weeks; *Q*<sub>56</sub> = quality of life at 660 weeks; *Q*<sub>57</sub> = quality of life at 672 weeks; *Q*<sub>58</sub> = quality of life at 684 weeks; *Q*<sub>59</sub> = quality of life at 696 weeks; *Q*<sub>60</sub> = quality of life at 708 weeks; *Q*<sub>61</sub> = quality of life at 720 weeks; *Q*<sub>62</sub> = quality of life at 732 weeks; *Q*<sub>63</sub> = quality of life at 744 weeks; *Q*<sub>64</sub> = quality of life at 756 weeks; *Q*<sub>65</sub> = quality of life at 768 weeks; *Q*<sub>66</sub> = quality of life at 780 weeks; *Q*<sub>67</sub> = quality of life at 792 weeks; *Q*<sub>68</sub> = quality of life at 804 weeks; *Q*<sub>69</sub> = quality of life at 816 weeks; *Q*<sub>70</sub> = quality of life at 828 weeks; *Q*<sub>71</sub> = quality of life at 840 weeks; *Q*<sub>72</sub> = quality of life at 852 weeks; *Q*<sub>73</sub> = quality of life at 864 weeks; *Q*<sub>74</sub> = quality of life at 876 weeks; *Q*<sub>75</sub> = quality of life at 888 weeks; *Q*<sub>76</sub> = quality of life at 900 weeks; *Q*<sub>77</sub> = quality of life at 912 weeks; *Q*<sub>78</sub> = quality of life at 924 weeks; *Q*<sub>79</sub> = quality of life at 936 weeks; *Q*<sub>80</sub> = quality of life at 948 weeks; *Q*<sub>81</sub> = quality of life at 960 weeks; *Q*<sub>82</sub> = quality of life at 972 weeks; *Q*<sub>83</sub> = quality of life at 984 weeks; *Q*<sub>84</sub> = quality of life at 996 weeks; *Q*<sub>85</sub> = quality of life at 1008 weeks; *Q*<sub>86</sub> = quality of life at 1020 weeks; *Q*<sub>87</sub> = quality of life at 1032 weeks; *Q*<sub>88</sub> = quality of life at 1044 weeks; *Q*<sub>89</sub> = quality of life at 1056 weeks; *Q*<sub>90</sub> = quality of life at 1068 weeks; *Q*<sub>91</sub> = quality of life at 1080 weeks; *Q*<sub>92</sub> = quality of life at 1092 weeks; *Q*<sub>93</sub> = quality of life at 1104 weeks; *Q*<sub>94</sub> = quality of life at 1116 weeks; *Q*<sub>95</sub> = quality of life at 1128 weeks; *Q*<sub>96</sub> = quality of life at 1140 weeks; *Q*<sub>97</sub> = quality of life at 1152 weeks; *Q*<sub>98</sub> = quality of life at 1164 weeks; *Q*<sub>99</sub> = quality of life at 1176 weeks; *Q*<sub>100</sub> = quality of life at 1188 weeks; *Q*<sub>101</sub> = quality of life at 1200 weeks; *Q*<sub>102</sub> = quality of life at 1212 weeks; *Q*<sub>103</sub> = quality of life at 1224 weeks; *Q*<sub>104</sub> = quality of life at 1236 weeks; *Q*<sub>105</sub> = quality of life at 1248 weeks; *Q*<sub>106</sub> = quality of life at 1260 weeks; *Q*<sub>107</sub> = quality of life at 1272 weeks; *Q*<sub>108</sub> = quality of life at 1284 weeks; *Q*<sub>109</sub> = quality of life at 1296 weeks; *Q*<sub>110</sub> = quality of life at 1308 weeks; *Q*<sub>111</sub> = quality of life at 1320 weeks; *Q*<sub>112</sub> = quality of life at 1332 weeks; *Q*<sub>113</sub> = quality of life at 1344 weeks; *Q*<sub>114</sub> = quality of life at 1356 weeks; *Q*<sub>115</sub> = quality of life at 1368 weeks; *Q*<sub>116</sub> = quality of life at 1380 weeks; *Q*<sub>117</sub> = quality of life at 1392 weeks; *Q*<sub>118</sub> = quality of life at 1404 weeks; *Q*<sub>119</sub> = quality of life at 1416 weeks; *Q*<sub>120</sub> = quality of life at 1428 weeks; *Q*<sub>121</sub> = quality of life at 1440 weeks; *Q*<sub>122</sub> = quality of life at 1452 weeks; *Q*<sub>123</sub> = quality of life at 1464 weeks; *Q*<sub>124</sub> = quality of life at 1476 weeks; *Q*<sub>125</sub> = quality of life at 1488 weeks; *Q*<sub>126</sub> = quality of life at 1500 weeks; *Q*<sub>127</sub> = quality of life at 1512 weeks; *Q*<sub>128</sub> = quality of life at 1524 weeks; *Q*<sub>129</sub> = quality of life at 1536 weeks; *Q*<sub>130</sub> = quality of life at 1548 weeks; *Q*<sub>131</sub> = quality of life at 1560 weeks; *Q*<sub>132</sub> = quality of life at 1572 weeks; *Q*<sub>133</sub> = quality of life at 1584 weeks; *Q*<sub>134</sub> = quality of life at 1596 weeks; *Q*<sub>135</sub> = quality of life at 1608 weeks; *Q*<sub>136</sub> = quality of life at 1620 weeks; *Q*<sub>137</sub> = quality of life at 1632 weeks; *Q*<sub>138</sub> = quality of life at 1644 weeks; *Q*<sub>139</sub> = quality of life at 1656 weeks; *Q*<sub>140</sub> = quality of life at 1668 weeks; *Q*<sub>141</sub> = quality of life at 1680 weeks; *Q*<sub>142</sub> = quality of life at 1692 weeks; *Q*<sub>143</sub> = quality of life at 1704 weeks; *Q*<sub>144</sub> = quality of life at 1716 weeks; *Q*<sub>145</sub> = quality of life at 1728 weeks; *Q*<sub>146</sub> = quality of life at 1740 weeks; *Q*<sub>147</sub> = quality of life at 1752 weeks; *Q*<sub>148</sub> = quality of life at 1764 weeks; *Q*<sub>149</sub> = quality of life at 1776 weeks; *Q*<sub>150</sub> = quality of life at 1788 weeks; *Q*<sub>151</sub> = quality of life at 1800 weeks; *Q*<sub>152</sub> = quality of life at 1812 weeks; *Q*<sub>153</sub> = quality of life at 1824 weeks; *Q*<sub>154</sub> = quality of life at 1836 weeks; *Q*<sub>155</sub> = quality of life at 1848 weeks; *Q*<sub>156</sub> = quality of life at 1860 weeks; *Q*<sub>157</sub> = quality of life at 1872 weeks; *Q*<sub>158</sub> = quality of life at 18

The chemical structure of the compound is shown below. The compound is a substituted benzene ring with a carboxylic acid group, a hydroxyl group, and a methyl group.

The first part of the book is devoted to the study of the structure of the algebra of differential operators on a manifold. The second part is devoted to the study of the structure of the algebra of differential operators on a manifold.

The 110000-ft-long second transverse diaphragm, 11 in. thick, is located at the intermediate support. It is 10 ft wide, 10 ft high, and has a back-slope of 1:1 (Fig. 1). Diaphragms 1 and 2 are located at the first and second supports, respectively. They are 10 ft wide, 10 ft high, and have a back-slope of 1:1 (Fig. 1). The diaphragms are located at the first, second, and third supports, respectively. They are 10 ft wide, 10 ft high, and have a back-slope of 1:1 (Fig. 1).

1. *Chrysomelidae* (100%)  
 2. *Curculionidae* (100%)  
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 98. *Curculionidae* (100%)  
 99. *Chrysomelidae* (100%)  
 100. *Curculionidae* (100%)

It is important to note that the results of the present study are based on a cross-sectional design. Therefore, the causal relationships between the variables cannot be definitively established. Future research should employ longitudinal designs to investigate the temporal relationships between the variables.

| Year | Age | Sex | Height (cm) | Weight (kg) | Heart rate (b/min) | Stroke volume (L/min) | Cardiac output (L/min) | Stroke volume index (L/min/m <sup>2</sup> ) | Cardiac output index (L/min/m <sup>2</sup> ) |
|------|-----|-----|-------------|-------------|--------------------|-----------------------|------------------------|---|--|
| 1990 | 20  | M   | 175         | 70          | 75                 | 5.2                   | 4.2                    | 3.0   | 2.5  |
| 1991 | 21  | M   | 178         | 75          | 78                 | 5.5                   | 4.5                    | 3.2   | 2.7  |
| 1992 | 22  | M   | 180         | 80          | 80                 | 5.8                   | 4.8                    | 3.4   | 2.9  |
| 1993 | 23  | M   | 182         | 85          | 82                 | 6.0                   | 5.0                    | 3.6   | 3.1  |
| 1994 | 24  | M   | 185         | 90          | 85                 | 6.2                   | 5.2                    | 3.8   | 3.3  |
| 1995 | 25  | M   | 188         | 95          | 88                 | 6.5                   | 5.5                    | 4.0   | 3.5  |
| 1996 | 26  | M   | 190         | 100         | 90                 | 6.8                   | 5.8                    | 4.2   | 3.7  |
| 1997 | 27  | M   | 192         | 105         | 92                 | 7.0                   | 6.0                    | 4.4   | 3.9  |
| 1998 | 28  | M   | 195         | 110         | 95                 | 7.2                   | 6.2                    | 4.6   | 4.1  |
| 1999 | 29  | M   | 198         | 115         | 98                 | 7.5                   | 6.5                    | 4.8   | 4.3  |
| 2000 | 30  | M   | 200         | 120         | 100                | 7.8                   | 6.8                    | 5.0   | 4.5  |

Rebuilding the Trust in Young Kazakhstan: Addressing Corruption Through the Internet  
 The authors examine the impact of the Internet on the trust of young people in Kazakhstan. They find that the Internet has a positive impact on trust, but this effect is moderated by the level of corruption in the country. In countries with high levels of corruption, the Internet has a stronger positive impact on trust. The authors suggest that the Internet can be used as a tool to promote transparency and accountability, and to build trust in institutions.

1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024, 2025, 2026, 2027, 2028, 2029, 2030, 2031, 2032, 2033, 2034, 2035, 2036, 2037, 2038, 2039, 2040, 2041, 2042, 2043, 2044, 2045, 2046, 2047, 2048, 2049, 2050, 2051, 2052, 2053, 2054, 2055, 2056, 2057, 2058, 2059, 2060, 2061, 2062, 2063, 2064, 2065, 2066, 2067, 2068, 2069, 2070, 2071, 2072, 2073, 2074, 2075, 2076, 2077, 2078, 2079, 2080, 2081, 2082, 2083, 2084, 2085, 2086, 2087, 2088, 2089, 2090, 2091, 2092, 2093, 2094, 2095, 2096, 2097, 2098, 2099, 2100, 2101, 2102, 2103, 2104, 2105, 2106, 2107, 2108, 2109, 2110, 2111, 2112, 2113, 2114, 2115, 2116, 2117, 2118, 2119, 2120, 2121, 2122, 2123, 2124, 2125, 2126, 2127, 2128, 2129, 2130, 2131, 2132, 2133, 2134, 2135, 2136, 2137, 2138, 2139, 2140, 2141, 2142, 2143, 2144, 2145, 2146, 2147, 2148, 2149, 2150, 2151, 2152, 2153, 2154, 2155, 2156, 2157, 2158, 2159, 2160, 2161, 2162, 2163, 2164, 2165, 2166, 2167, 2168, 2169, 2170, 2171, 2172, 2173, 2174, 2175, 2176, 2177, 2178, 2179, 2180, 2181, 2182, 2183, 2184, 2185, 2186, 2187, 2188, 2189, 2190, 2191, 2192, 2193, 2194, 2195, 2196, 2197, 2198, 2199, 2200, 2201, 2202, 2203, 2204, 2205, 2206, 2207, 2208, 2209, 2210, 2211, 2212, 2213, 2214, 2215, 2216, 2217, 2218, 2219, 2220, 2221, 2222, 2223, 2224, 2225, 2226, 2227, 2228, 2229, 2230, 2231, 2232, 2233, 2234, 2235, 2236, 2237, 2238, 2239, 2240, 2241, 2242, 2243, 2244, 2245, 2246, 2247, 2248, 2249, 2250, 2251, 2252, 2253, 2254, 2255, 2256, 2257, 2258, 2259, 2260, 2261, 2262, 2263, 2264, 2265, 2266, 2267, 2268, 2269, 2270, 2271, 2272, 2273, 2274, 2275, 2276, 2277, 2278, 2279, 2280, 2281, 2282, 2283, 2284, 2285, 2286, 2287, 2288, 2289, 2290, 2291, 2292, 2293, 2294, 2295, 2296, 2297, 2298, 2299, 2300, 2301, 2302, 2303, 2304, 2305, 2306, 2307, 2308, 2309, 2310, 2311, 2312, 2313, 2314, 2315, 2316, 2317, 2318, 2319, 2320, 2321, 2322, 2323, 2324, 2325, 2326, 2327, 2328, 2329, 2330, 2331, 2332, 2333, 2334, 2335, 2336, 2337, 2338, 2339, 2340, 2341, 2342, 2343, 2344, 2345, 2346, 2347, 2348, 2349, 2350, 2351, 2352, 2353, 2354, 2355, 2356, 2357, 2358, 2359, 2360, 2361, 2362, 2363, 2364, 2365, 2366, 2367, 2368, 2369, 2370, 2371, 2372, 2373, 2374, 2375, 2376, 2377, 2378, 2379, 2380, 2381, 2382, 2383, 2384, 2385, 2386, 2387, 2388, 2389, 2390, 2391, 2392, 2393, 2394, 2395, 2396, 2397, 2398, 2399, 2400, 2401, 2402, 2403, 2404, 2405, 2406, 2407, 2408, 2409, 2410, 2411, 2412, 2413, 2414, 2415, 2416, 2417, 2418, 2419, 2420, 2421, 2422, 2423, 2424, 2425, 2426, 2427, 2428, 2429, 2430, 2431, 2432, 2433, 2434, 2435, 2436, 2437, 2438, 2439, 2440, 2441, 2442, 2443, 2444, 2445, 2446, 2447, 2448, 2449, 2450, 2451, 2452, 2453, 2454, 2455, 2456, 2457, 2458, 2459, 2460, 2461, 2462, 2463, 2464, 2465, 2466, 2467, 2468, 2469, 2470, 2471, 2472, 2473, 2474, 2475, 2476, 2477, 2478, 2479, 2480, 2481, 2482, 2483, 2484, 2485, 2486, 2487, 2488, 2489, 2490, 2491, 2492, 2493, 2494, 2495, 2496, 2497, 2498, 2499, 2500, 2501, 2502, 2503, 2504, 2505, 2506, 2507, 2508, 2509, 2510, 2511, 2512, 2513, 2514, 2515, 2516, 2517, 2518, 2519, 2520, 2521, 2522, 2523, 2524, 2525, 2526, 2527, 2528, 2529, 2530, 2531, 2532, 2533, 2534, 2535, 2536, 2537, 2538, 2539, 2540, 2541, 2542, 2543, 2544, 2545, 2546, 2547, 2548, 2549, 2550, 2551, 2552, 2553, 2554, 2555, 2556, 2557, 2558, 2559, 2560, 2561, 2562, 2563, 2564, 2565, 2566, 2567, 2568, 2569, 2570, 2571, 2572, 2573, 2574, 2575, 2576, 2577, 2578, 2579, 2580, 2581, 2582, 2583, 2584, 2585, 2586, 2587, 2588, 2589, 2590, 2591, 2592, 2593, 2594, 2595, 2596, 2597, 2598, 2599, 2600, 2601, 2602, 2603, 2604, 2605, 2606, 2607, 2608, 2609, 2610, 2611, 2612, 2613, 2614, 2615, 2616, 2617, 2618, 2619, 2620, 2621, 2622, 2623, 2624, 2625, 2626, 2627, 2628, 2629, 2630, 2631, 2632, 2633, 2634, 2635, 2636, 2637, 2638, 2639, 2640, 2641, 2642, 2643, 2644, 2645, 2646, 2647, 2648, 2649, 2650, 2651, 2652, 2653, 2654, 2655, 2656, 2657, 2658, 2659, 2660, 2661, 2662, 2663, 2664, 2665, 2666, 2667, 2668, 2669, 2670, 2671, 2672, 2673, 2674, 2675, 2676, 2677, 2678, 2679, 26

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to the treatment of prisoners, the administrative management of hospitals and the like. The book is written in a simple, direct, and unpretentious style, and the author's knowledge of the subject is evident throughout. The book is a valuable addition to the literature of the subject.

The author's treatment of the subject is thorough and comprehensive, and the book is a valuable addition to the literature of the subject.

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There is a link, also, between the two concepts of *transformation* and *transformational* leadership. In the first sense, the *transformation* of the organization is the process of change, and the *transformational* leader is the one who leads the organization through this process. In the second sense, the *transformational* leader is the one who leads the organization through the process of change, and the *transformation* of the organization is the process of change.

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Fig. 1 shows a typical and enlarged portion of the treated polymer which contained a high amount of the active component. The application of the polymer to the printed layer of the paper was made by means of a brush. The polymer was dried at 100°C for 24 hr. The results of the tests are shown in Table I.

For example, the *Journal of the American Medical Association* (JAMA) has a long history of publishing research on the health effects of tobacco. In 1962, JAMA published a landmark study by the U.S. Surgeon General, Dr. Luther Terry, which concluded that smoking causes lung cancer and heart disease. This study was a key piece of evidence in the U.S. Supreme Court case *Grain Processing Corp. v. American Tobacco Co.* (1962), which ruled that tobacco companies were liable for the health effects of their products. JAMA has since published many other studies on the health effects of tobacco, and its research has been instrumental in shaping public health policy.

| Threat species            | Number of sightings | Year | Sex  | Age   | Location      |
|---------------------------|---------------------|------|------|-------|---------------|
| 1. Red-tailed Tropicbird  | 1                   | 1991 | Male | Adult | Point of View |
| 2. Red-tailed Tropicbird  | 1                   | 1991 | Male | Adult | Point of View |
| 3. Red-tailed Tropicbird  | 1                   | 1991 | Male | Adult | Point of View |
| 4. Red-tailed Tropicbird  | 1                   | 1991 | Male | Adult | Point of View |
| 5. Red-tailed Tropicbird  | 1                   | 1991 | Male | Adult | Point of View |
| 6. Red-tailed Tropicbird  | 1                   | 1991 | Male | Adult | Point of View |
| 7. Red-tailed Tropicbird  | 1                   | 1991 | Male | Adult | Point of View |
| 8. Red-tailed Tropicbird  | 1                   | 1991 | Male | Adult | Point of View |
| 9. Red-tailed Tropicbird  | 1                   | 1991 | Male | Adult | Point of View |
| 10. Red-tailed Tropicbird | 1                   | 1991 | Male | Adult | Point of View |

[illegible]



conclusion, we had 120 human subjects, 60 men and 60 women, examine responses through a 100-megapixel and a 10-megapixel camera of responses generated by a machine that was asked to tell the difference between two faces that were that similar, here and there. The machine was able to distinguish responses (about 90% for the 100-megapixel camera, about 80% for the 10-megapixel camera) of generation with the 100-megapixel camera, but not with the 10-megapixel camera. The task of a machine to tell the difference between two faces that were that similar and other observations of the machine and human responses to the machine. Some would suggest that the machine's behavior was not

thoughtful through design. It is a form of "artificial intelligence" that is not a replacement of us, but of the most up-to-date and most powerful machine. The machine is not a machine that has been published and is not a machine that is not a machine, especially in the case of the machine's behavior.



## Preparations, &c.

### GRASSES.

(Linnæus: *Monard. Dependentium* var. *rad. Gall. 189* (Linnæus: *Monard. 189*.)

*Grass* (Linnæus: *Monard. Dependentium* var. *rad. Gall. 189* (Linnæus: *Monard. 189*.)

It is difficult to find out what is the best way to grow these plants. It is best to grow them in a warm, sunny place, and to water them frequently. It is also best to give them a good manure, and to keep them well weeded.

It is also best to give them a good manure, and to keep them well weeded.

### GRASSES. (Linnæus: 189.)

(Linnæus: *Monard. Dependentium* var. *rad. Gall. 189* (Linnæus: *Monard. 189*.)

It is best to grow these plants in a warm, sunny place, and to water them frequently. It is also best to give them a good manure, and to keep them well weeded.

It is also best to give them a good manure, and to keep them well weeded.











5. The following table shows the number of people who attended the 2000 Summer Olympic Games in Sydney, Australia, by country. The data are given in thousands of people.

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010670

1. The first step in the process is to identify the problem or issue that needs to be addressed. This involves gathering information and understanding the context of the problem.

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1. The first of these is the fact that the United States Customs Service is a part of the Department of the Treasury, and is therefore subject to the control and supervision of the Secretary of the Treasury. This is in contrast with the other two services, the United States Coast Guard and the United States Fish and Wildlife Service, which are part of the Department of the Interior and are therefore subject to the control and supervision of the Secretary of the Interior.

2. The second of these is the fact that the United States Customs Service is a part of the Department of the Treasury, and is therefore subject to the control and supervision of the Secretary of the Treasury. This is in contrast with the other two services, the United States Coast Guard and the United States Fish and Wildlife Service, which are part of the Department of the Interior and are therefore subject to the control and supervision of the Secretary of the Interior.

3. The third of these is the fact that the United States Customs Service is a part of the Department of the Treasury, and is therefore subject to the control and supervision of the Secretary of the Treasury. This is in contrast with the other two services, the United States Coast Guard and the United States Fish and Wildlife Service, which are part of the Department of the Interior and are therefore subject to the control and supervision of the Secretary of the Interior.

#### 1920—Exportation of Goods.

1. The first of these is the fact that the United States Customs Service is a part of the Department of the Treasury, and is therefore subject to the control and supervision of the Secretary of the Treasury. This is in contrast with the other two services, the United States Coast Guard and the United States Fish and Wildlife Service, which are part of the Department of the Interior and are therefore subject to the control and supervision of the Secretary of the Interior.

#### 1921—Officers' Accounts and Books, Ship's Books, Receipts, and M.B.S. Shipping List.

1. The first of these is the fact that the United States Customs Service is a part of the Department of the Treasury, and is therefore subject to the control and supervision of the Secretary of the Treasury. This is in contrast with the other two services, the United States Coast Guard and the United States Fish and Wildlife Service, which are part of the Department of the Interior and are therefore subject to the control and supervision of the Secretary of the Interior.



**III.—Analgesics.**

Supra-renal Gland Extract  
 (Bayer, 1905, 1906, 1907, 1908)

Supra-renal Gland Extract (Bayer, 1905, 1906, 1907, 1908)  
 This extract is a powerful analgesic, and is used in the treatment of various forms of pain, such as neuralgia, rheumatism, and other conditions. It is administered in the form of capsules, and is usually given in doses of 1 to 2 capsules, three or four times a day. The extract is prepared from the supra-renal glands of the adrenal gland, and is a powerful analgesic, and is used in the treatment of various forms of pain, such as neuralgia, rheumatism, and other conditions. It is administered in the form of capsules, and is usually given in doses of 1 to 2 capsules, three or four times a day.

**(44.)—Medical Officers (Working in Naval Hospitals and Forces in Africa)**  
 (1905, 1906, 1907, 1908)

Supra-renal Gland Extract (Bayer, 1905, 1906, 1907, 1908)  
 This extract is a powerful analgesic, and is used in the treatment of various forms of pain, such as neuralgia, rheumatism, and other conditions. It is administered in the form of capsules, and is usually given in doses of 1 to 2 capsules, three or four times a day. The extract is prepared from the supra-renal glands of the adrenal gland, and is a powerful analgesic, and is used in the treatment of various forms of pain, such as neuralgia, rheumatism, and other conditions. It is administered in the form of capsules, and is usually given in doses of 1 to 2 capsules, three or four times a day.

**(45.)—Medical Officers (Working in Naval Hospitals and Forces in Africa)**  
 (1905, 1906, 1907, 1908)

Supra-renal Gland Extract (Bayer, 1905, 1906, 1907, 1908)  
 This extract is a powerful analgesic, and is used in the treatment of various forms of pain, such as neuralgia, rheumatism, and other conditions. It is administered in the form of capsules, and is usually given in doses of 1 to 2 capsules, three or four times a day. The extract is prepared from the supra-renal glands of the adrenal gland, and is a powerful analgesic, and is used in the treatment of various forms of pain, such as neuralgia, rheumatism, and other conditions. It is administered in the form of capsules, and is usually given in doses of 1 to 2 capsules, three or four times a day.

| Day                       | 1905 |   |   |   | 1906 |   |   |   | 1907 |   |   |   | 1908 |   |   |   |
|---------------------------|------|---|---|---|------|---|---|---|------|---|---|---|------|---|---|---|
|                           | 1    | 2 | 3 | 4 | 1    | 2 | 3 | 4 | 1    | 2 | 3 | 4 | 1    | 2 | 3 | 4 |
| Supra-renal Gland Extract | 1    | 2 | 3 | 4 | 1    | 2 | 3 | 4 | 1    | 2 | 3 | 4 | 1    | 2 | 3 | 4 |

Supra-renal Gland Extract (Bayer, 1905, 1906, 1907, 1908)  
 This extract is a powerful analgesic, and is used in the treatment of various forms of pain, such as neuralgia, rheumatism, and other conditions. It is administered in the form of capsules, and is usually given in doses of 1 to 2 capsules, three or four times a day. The extract is prepared from the supra-renal glands of the adrenal gland, and is a powerful analgesic, and is used in the treatment of various forms of pain, such as neuralgia, rheumatism, and other conditions. It is administered in the form of capsules, and is usually given in doses of 1 to 2 capsules, three or four times a day.

*(The following information was obtained from the records of the Federal Bureau of Investigation, Department of Justice.)*

Received 11 April 2003; accepted 10 June 2003  
Published online 23 July 2003 in Wiley InterScience (www.interscience.wiley.com). DOI: 10.1002/anie.200300203

1994, 1995, 1996, 1997, 1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024, 2025, 2026, 2027, 2028, 2029, 2030, 2031, 2032, 2033, 2034, 2035, 2036, 2037, 2038, 2039, 2040, 2041, 2042, 2043, 2044, 2045, 2046, 2047, 2048, 2049, 2050, 2051, 2052, 2053, 2054, 2055, 2056, 2057, 2058, 2059, 2060, 2061, 2062, 2063, 2064, 2065, 2066, 2067, 2068, 2069, 2070, 2071, 2072, 2073, 2074, 2075, 2076, 2077, 2078, 2079, 2080, 2081, 2082, 2083, 2084, 2085, 2086, 2087, 2088, 2089, 2090, 2091, 2092, 2093, 2094, 2095, 2096, 2097, 2098, 2099, 2100, 2101, 2102, 2103, 2104, 2105, 2106, 2107, 2108, 2109, 2110, 2111, 2112, 2113, 2114, 2115, 2116, 2117, 2118, 2119, 2120, 2121, 2122, 2123, 2124, 2125, 2126, 2127, 2128, 2129, 2130, 2131, 2132, 2133, 2134, 2135, 2136, 2137, 2138, 2139, 2140, 2141, 2142, 2143, 2144, 2145, 2146, 2147, 2148, 2149, 2150, 2151, 2152, 2153, 2154, 2155, 2156, 2157, 2158, 2159, 2160, 2161, 2162, 2163, 2164, 2165, 2166, 2167, 2168, 2169, 2170, 2171, 2172, 2173, 2174, 2175, 2176, 2177, 2178, 2179, 2180, 2181, 2182, 2183, 2184, 2185, 2186, 2187, 2188, 2189, 2190, 2191, 2192, 2193, 2194, 2195, 2196, 2197, 2198, 2199, 2200, 2201, 2202, 2203, 2204, 2205, 2206, 2207, 2208, 2209, 2210, 2211, 2212, 2213, 2214, 2215, 2216, 2217, 2218, 2219, 2220, 2221, 2222, 2223, 2224, 2225, 2226, 2227, 2228, 2229, 2230, 2231, 2232, 2233, 2234, 2235, 2236, 2237, 2238, 2239, 2240, 2241, 2242, 2243, 2244, 2245, 2246, 2247, 2248, 2249, 2250, 2251, 2252, 2253, 2254, 2255, 2256, 2257, 2258, 2259, 2260, 2261, 2262, 2263, 2264, 2265, 2266, 2267, 2268, 2269, 2270, 2271, 2272, 2273, 2274, 2275, 2276, 2277, 2278, 2279, 2280, 2281, 2282, 2283, 2284, 2285, 2286, 2287, 2288, 2289, 2290, 2291, 2292, 2293, 2294, 2295, 2296, 2297, 2298, 2299, 2300, 2301, 2302, 2303, 2304, 2305, 2306, 2307, 2308, 2309, 2310, 2311, 2312, 2313, 2314, 2315, 2316, 2317, 2318, 2319, 2320, 2321, 2322, 2323, 2324, 2325, 2326, 2327, 2328, 2329, 2330, 2331, 2332, 2333, 2334, 2335, 2336, 2337, 2338, 2339, 2340, 2341, 2342, 2343, 2344, 2345, 2346, 2347, 2348, 2349, 2350, 2351, 2352, 2353, 2354, 2355, 2356, 2357, 2358, 2359, 2360, 2361, 2362, 2363, 2364, 2365, 2366, 2367, 2368, 2369, 2370, 2371, 2372, 2373, 2374, 2375, 2376, 2377, 2378, 2379, 2380, 2381, 2382, 2383, 2384, 2385, 2386, 2387, 2388, 2389, 2390, 2391, 2392, 2393, 2394, 2395, 2396, 2397, 2398, 2399, 2400, 2401, 2402, 2403, 2404, 2405, 2406, 2407, 2408, 2409, 2410, 2411, 2412, 2413, 2414, 2415, 2416, 2417, 2418, 2419, 2420, 2421, 2422, 2423, 2424, 2425, 2426, 2427, 2428, 2429, 2430, 2431, 2432, 2433, 2434, 2435, 2436, 2437, 2438, 2439, 2440, 2441, 2442, 2443, 2444, 2445, 2446, 2447, 2448, 2449, 2450, 2451, 2452, 2453, 2454, 2455, 2456, 2457, 2458, 2459, 2460, 2461, 2462, 2463, 2464, 2465, 2466, 2467, 2468, 2469, 2470, 2471, 2472, 2473, 2474, 2475, 2476, 2477, 2478, 2479, 2480, 2481, 2482, 2483, 2484, 2485, 2486, 2487, 2488, 2489, 2490, 2491, 2492, 2493, 2494, 2495, 2496, 2497, 2498, 2499, 2500, 2501, 2502, 2503, 2504, 2505, 2506, 2507, 2508, 2509, 2510, 2511, 2512, 2513, 2514, 2515, 2516, 2517, 2518, 2519, 2520, 2521, 2522, 2523, 2524, 2525, 2526, 2527, 2528, 2529, 2530, 2531, 2532, 2533, 2534, 2535, 2536, 2537, 2538, 2539, 2540, 2541, 2542, 2543, 2544, 2545, 2546, 2547, 2548, 2549, 2550, 2551, 2552, 2553, 2554, 2555, 2556, 2557, 2558, 2559, 2560, 2561, 2562, 2563, 2564, 2565, 2566, 2567, 2568, 2569, 2570, 2571, 2572, 2573, 2574, 2575, 2576, 2577, 2578, 2579, 2580, 2581, 2582, 2583, 2584, 2585, 2586, 2587, 2588, 2589, 2590, 2591, 2592, 2593, 2594, 2595, 2596, 2597, 2598, 2599, 2600, 2601, 2602, 2603, 2604, 2605, 2606, 2607, 2608, 2609, 2610, 2611, 2612, 2613, 2614, 2615, 2616, 2617, 2618, 2619, 2620, 2621, 2622, 2623, 2624, 2625, 2626, 2627, 2628, 2629, 2630, 2631, 2632, 2633, 2634, 2635, 2636, 2637, 2638, 2639, 2640, 2641, 2642, 2643, 2644, 2645, 2646, 2647, 2648, 2649, 2650, 2651, 2652, 2653, 2654, 2655, 2656, 2657, 2658, 2659, 2660, 2661, 2662, 2663, 2664, 2665, 2666, 2667, 2668, 2669, 2670, 2671, 2672, 2673, 2674, 2675, 26

[illegible]

1.  $\frac{1}{2}$  of the population is female. 2. The population is 100 million. 3. The population is 100 million. 4. The population is 100 million.

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and by 70 mm in 12 h. The maximum rate of increase was 0.015 mm h<sup>-1</sup> and by 70 mm in 12 h. The maximum rate of increase was 0.015 mm h<sup>-1</sup> and by 70 mm in 12 h.

1. The first step is to identify the problem or question that needs to be answered. This involves understanding the context and the specific requirements of the task.

(c) *Formal properties of language* (this is related to the generalization made in (b))

1. The first step is to identify the problem. This involves understanding the current situation and the goals that need to be achieved. It is important to gather all relevant information and to define the scope of the problem.

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| Country | Year | Population (millions) | Urban population (millions) | Urban population (%) |
|---------|------|-----------------------|-----------------------------|----------------------|
| Algeria | 1990 | 10.0                  | 4.0                         | 40.0                 |
| Algeria | 2000 | 11.0                  | 5.0                         | 45.5                 |
| Algeria | 2010 | 12.0                  | 6.0                         | 50.0                 |
| Algeria | 2020 | 13.0                  | 7.0                         | 53.8                 |
| Algeria | 2030 | 14.0                  | 8.0                         | 57.1                 |
| Algeria | 2040 | 15.0                  | 9.0                         | 60.0                 |
| Algeria | 2050 | 16.0                  | 10.0                        | 62.5                 |
| Algeria | 2060 | 17.0                  | 11.0                        | 64.7                 |
| Algeria | 2070 | 18.0                  | 12.0                        | 66.7                 |
| Algeria | 2080 | 19.0                  | 13.0                        | 68.4                 |
| Algeria | 2090 | 20.0                  | 14.0                        | 70.0                 |
| Algeria | 2100 | 21.0                  | 15.0                        | 71.4                 |
| Algeria | 2110 | 22.0                  | 16.0                        | 72.7                 |
| Algeria | 2120 | 23.0                  | 17.0                        | 73.9                 |
| Algeria | 2130 | 24.0                  | 18.0                        | 75.0                 |
| Algeria | 2140 | 25.0                  | 19.0                        | 76.0                 |
| Algeria | 2150 | 26.0                  | 20.0                        | 76.9                 |
| Algeria | 2160 | 27.0                  | 21.0                        | 77.8                 |
| Algeria | 2170 | 28.0                  | 22.0                        | 78.6                 |
| Algeria | 2180 | 29.0                  | 23.0                        | 79.3                 |
| Algeria | 2190 | 30.0                  | 24.0                        | 80.0                 |
| Algeria | 2200 | 31.0                  | 25.0                        | 80.6                 |
| Algeria | 2210 | 32.0                  | 26.0                        | 81.3                 |
| Algeria | 2220 | 33.0                  | 27.0                        | 81.8                 |
| Algeria | 2230 | 34.0                  | 28.0                        | 82.4                 |
| Algeria | 2240 | 35.0                  | 29.0                        | 82.9                 |
| Algeria | 2250 | 36.0                  | 30.0                        | 83.3                 |
| Algeria | 2260 | 37.0                  | 31.0                        | 83.8                 |
| Algeria | 2270 | 38.0                  | 32.0                        | 84.2                 |
| Algeria | 2280 | 39.0                  | 33.0                        | 84.6                 |
| Algeria | 2290 | 40.0                  | 34.0                        | 85.0                 |
| Algeria | 2300 | 41.0                  | 35.0                        | 85.4                 |
| Algeria | 2310 | 42.0                  | 36.0                        | 85.7                 |
| Algeria | 2320 | 43.0                  | 37.0                        | 86.0                 |
| Algeria | 2330 | 44.0                  | 38.0                        | 86.4                 |
| Algeria | 2340 | 45.0                  | 39.0                        | 86.7                 |
| Algeria | 2350 | 46.0                  | 40.0                        | 87.0                 |
| Algeria | 2360 | 47.0                  | 41.0                        | 87.2                 |
| Algeria | 2370 | 48.0                  | 42.0                        | 87.5                 |
| Algeria | 2380 | 49.0                  | 43.0                        | 87.8                 |
| Algeria | 2390 | 50.0                  | 44.0                        | 88.0                 |
| Algeria | 2400 | 51.0                  | 45.0                        | 88.2                 |
| Algeria | 2410 | 52.0                  | 46.0                        | 88.5                 |
| Algeria | 2420 | 53.0                  | 47.0                        | 88.7                 |
| Algeria | 2430 | 54.0                  | 48.0                        | 88.9                 |
| Algeria | 2440 | 55.0                  | 49.0                        | 89.1                 |
| Algeria | 2450 | 56.0                  | 50.0                        | 89.3                 |
| Algeria | 2460 | 57.0                  | 51.0                        | 89.5                 |
| Algeria | 2470 | 58.0                  | 52.0                        | 89.7                 |
| Algeria | 2480 | 59.0                  | 53.0                        | 89.8                 |
| Algeria | 2490 | 60.0                  | 54.0                        | 90.0                 |
| Algeria | 2500 | 61.0                  | 55.0                        | 90.2                 |
| Algeria | 2510 | 62.0                  | 56.0                        | 90.3                 |
| Algeria | 2520 | 63.0                  | 57.0                        | 90.5                 |
| Algeria | 2530 | 64.0                  | 58.0                        | 90.6                 |
| Algeria | 2540 | 65.0                  | 59.0                        | 90.8                 |
| Algeria | 2550 | 66.0                  | 60.0                        | 90.9                 |
| Algeria | 2560 | 67.0                  | 61.0                        | 91.0                 |
| Algeria | 2570 | 68.0                  | 62.0                        | 91.2                 |
| Algeria | 2580 | 69.0                  | 63.0                        | 91.3                 |
| Algeria | 2590 | 70.0                  | 64.0                        | 91.4                 |
| Algeria | 2600 | 71.0                  | 65.0                        | 91.6                 |
| Algeria | 2610 | 72.0                  | 66.0                        | 91.7                 |
| Algeria | 2620 | 73.0                  | 67.0                        | 91.9                 |
| Algeria | 2630 | 74.0                  | 68.0                        | 92.0                 |
| Algeria | 2640 | 75.0                  | 69.0                        | 92.1                 |
| Algeria | 2650 | 76.0                  | 70.0                        | 92.2                 |
| Algeria | 2660 | 77.0                  | 71.0                        | 92.3                 |
| Algeria | 2670 | 78.0                  | 72.0                        | 92.4                 |
| Algeria | 2680 | 79.0                  | 73.0                        | 92.5                 |
| Algeria | 2690 | 80.0                  | 74.0                        | 92.6                 |
| Algeria | 2700 | 81.0                  | 75.0                        | 92.7                 |
|         |      |                       |                             |                      |

1. The first step in the process is to identify the problem or issue that needs to be addressed. This involves gathering information and understanding the context of the problem.

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[illegible]

| Year | Number of cases | Number of deaths |
|------|-----------------|------------------|
| 1990 | 100             | 10               |
| 1991 | 120             | 12               |
| 1992 | 150             | 15               |
| 1993 | 180             | 18               |
| 1994 | 200             | 20               |
| 1995 | 220             | 22               |
| 1996 | 250             | 25               |
| 1997 | 280             | 28               |
| 1998 | 300             | 30               |
| 1999 | 320             | 32               |
| 2000 | 350             | 35               |
| 2001 | 380             | 38               |
| 2002 | 400             | 40               |
| 2003 | 420             | 42               |
| 2004 | 450             | 45               |
| 2005 | 480             | 48               |
| 2006 | 500             | 50               |
| 2007 | 520             | 52               |
| 2008 | 550             | 55               |
| 2009 | 580             | 58               |
| 2010 | 600             | 60               |
| 2011 | 620             | 62               |
| 2012 | 650             | 65               |
| 2013 | 680             | 68               |
| 2014 | 700             | 70               |
| 2015 | 720             | 72               |
| 2016 | 750             | 75               |
| 2017 | 780             | 78               |
| 2018 | 800             | 80               |
| 2019 | 820             | 82               |
| 2020 | 850             | 85               |
| 2021 | 880             | 88               |
| 2022 | 900             | 90               |
| 2023 | 920             | 92               |
| 2024 | 950             | 95               |
| 2025 | 980             | 98               |
| 2026 | 1000            | 100              |
| 2027 | 1020            | 102              |
| 2028 | 1050            | 105              |
| 2029 | 1080            | 108              |
| 2030 | 1100            | 110              |

<sup>1</sup> *For all values of  $\alpha$ , there are given and are made assigned, as best as it is, and it will be, any, and*

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1. The first step in the process of the development of the curriculum is the identification of the needs of the community. This is done by the curriculum committee, which is composed of representatives of the community, the school, and the parents. The committee then identifies the needs of the community and the school, and then develops a curriculum that meets these needs.

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10. The "Society of the Future" is a group of people who are interested in the future of the world. They are interested in the future of the world because they believe that the world is going to be a better place in the future. They are interested in the future of the world because they believe that the world is going to be a better place in the future.

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*(continued)*

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**Article Accepted for Consideration by the Board of Directors**

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Published by the American Medical Association

**1934 - Special Advisory Council - Organization, Plan and Program**

By the American Medical Association

The American Medical Association has been organized for the purpose of representing the interests of the medical profession in the United States and of promoting the highest standards of medical practice. The Association is composed of members who are licensed to practice medicine in the United States and who are engaged in the practice of medicine. The Association is organized into a hierarchy of committees and subcommittees, each of which is responsible for a specific area of the Association's work. The Association's program is designed to promote the highest standards of medical practice and to protect the interests of the medical profession.

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**1934 - Changes for Hospital Administration Insurance**

By the American Medical Association

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**1934 - Hospital Service of Cook**

By the American Medical Association

The American Medical Association has been organized for the purpose of representing the interests of the medical profession in the United States and of promoting the highest standards of medical practice. The Association is composed of members who are licensed to practice medicine in the United States and who are engaged in the practice of medicine. The Association is organized into a hierarchy of committees and subcommittees, each of which is responsible for a specific area of the Association's work. The Association's program is designed to promote the highest standards of medical practice and to protect the interests of the medical profession.





any change in the point of view. (c) The power of accommodation (accommodation) enables us to judge on some degree, the relative distances of objects which lie beyond a zone where in the stereoscopic eye parallel rays coming from a distance, are focused on the retina. (d) The change in the apparent size of known objects.

But even and above these facts a particular fact the power of binocular vision, which in its most efficient degree is known as stereoscopic vision. The simultaneous perception of an object by both eyes produces an image, an optical part of each vision as intensity, the visual area are so decided that they meet at the object. These simultaneous and the perception may exist and yet the desire to fuse mentally the two images may be absent, resulting in the suppression of the image of single retinal images. In such cases, the change by fusion may be small and single binocular vision maintained only by an effort. But if the desire for fusion be great single binocular vision will be present and the two slightly differing images received by each eye blended mentally and so perceived as they are. In other words the third dimension has now been apprehended and in addition to the concepts of what, we are able to judge the relative distances of various objects from us.

Obviously stereoscopic efficiency must largely depend on the ease with which it is accomplished or rather preserved. Clinical facts indicate inherent changes of any appreciable refractive error, i.e., all are factors which have to be considered. The statement to be described is the state of vision in testing the exact extent of depth perception where the highest degree of stereoscopic vision has already been established and the degree vision is known to be good.

#### EVOLUTION.

The establishment of binocular fixation or rather the stereoscopic vision and more especially its stability, would appear to be a late development in mammalian life. Such animals as man, sheep, dog possess binocular vision some degree of fusion, though the single image perceived by them is partially blurred and a diplopia tendency frequent. The cat's vision is distance in large and the effect required to maintain single binocular vision great. It must be remembered that the greater the parallelism of the visual axes when fixated on a distant object, the greater will be the 'quality' of the fusion and the stability of the binocular fixation.

If we look back through the vista of animal life and its evolutionary progress as reflected by the rates that, as ghosts of a past supremacy vanish. It seems easy to trace step by step, the stages that have been reached before a full degree of stereoscopy has been obtained and, with a due regard to the present value that a knowledge of the properties of things, and these three dimensional values gives light, and the

and the lateral compound eye of the open-eyed sand. The literature on communication among the open-eyed species is scanty.

Slipping a forefinger into the mouth into the nostril, between the labrum and the maxilla, was, we find, a well-practised remedy with fish and insects early forms of insects and arachnids etc.—sometimes with sight, of a sort, but with little or no power of even accommodation. Opposite to these were and are but bluish, almost transparent, orbicular, often only marked with judging distance but but have been by a quality coming to increasing focus: and without perhaps the want of a better expectation on the one kind a sense of reality, and on the other a sense of apprehension.

The simplicity of most of the primitive forms of animal life, as this explains the various functions and independentness: as we in order almost complete expectation, as it such as simple that no effort at focus can have been even remotely, possibly a world's single mechanical means with a progressive something as accommodation comes would then be present, and with it such power of judging distance and perspective as these potentials may afford. Most of the facts are able to judge distance by an enhanced power of accommodation, enabling them, when necessary, to make distance the dynamic relation of the eye.

The gradual establishment of sight thus seems, in itself, more to have been represented in independent nature, even progressive and expert species, clearly realised that even must be supplemented in some way, if the defensive function of the highest forms of animal life was to remain adequate in the struggle for existence: a just appreciation of distance, form and shape became necessary.

The presence of such a simple eye, as a constantly placed addition to the lateral compound eye of many insects is perhaps a further attempt in this direction. The great covering of the lens in the cornea has justified the notion that these eyes are really used for nocturnal vision: and to this the suggestion that insect life can have vision beyond the range of our hearing: that there can perceive the ultra-violet rays as a colour of which we have no conception, and we must realise that, complete and perfect though it be, there remains against the substance, of space is the fact as adequate as.

One more example may perhaps be given of Nature's experiments in the direction of binocular vision. The presence of a functioning third or fourth eye appears from geological record to have been universal in the earliest phlebotomous arthropods: the arachnids, and other types of jointed limbs and arachnids etc. that it existed from Carboniferous to Devonian times. The third eye lay, held over, and on the great stalk and gland common to even man. It is interesting to note that in certain kinds: e.g. *Lucania opila* and *Sphenodon punctatus* (New Zealand)

<sup>1</sup> The same structure and arrangement of sense of sight is found in some of the lower vertebrates.

various elements of the third eye, its form, position and function, have been steadily demonstrated, though all direction is now lost and even to the strongest light, no reflex has been obtained.

Always must it be a matter of conjecture as to what the coverage of the paired eye really was, obtained midway between and anterior to the lateral eyes. It is obvious that the interocular distance from the forehead to either lateral eye was little more than half the total interocular distance. Assuming that the two lateral visual axes were in opposition and directed forwardly and that the paired eye possessed a much larger range of movement it seems reasonable to infer that the central eye could in the interests of binocular single vision, collaborate with either lateral eye in reciprocal regard.

Binocular suppression of the image formed in the eye for the time being, toward eye would probably occur. Whether this be the right interpretation of the function allotted to the 'old fashioned' eye now can say, and so the most interesting of reflexes now seems an unobscured one, as may any such binocular function as it may have created can but have been lost and unstable, as it has long been left behind in the upward progress of animal life.

That the development of a stable human vision at a late age, even in *Apes* requires has been fully demonstrated by Wack's on a series of experiments on infants. He has shown that though the pupillary light and fixation reflexes are present in such eye separately from infant infancy, there is no attempt at binocular function until the child is five or six months old. For the first five months of life binocular function is highly unstable, but rapidly increases, and finally perfected. The slightest gesture, or other disturbance often causes one or the other eye to deviate in the horizontal plane. Co-ordinate movements in the vertical plane are well developed from earliest infancy. The best evidence of a "device for binocular vision" appear somewhere about the sixth month when the presence of an interfering object, upon or in immediately associated by a transient response of the obstructed eye towards it as evidence to overcome the diplopia thus produced, as a rule, though, the process occurs in almost immediate suppression of the image from the threatened eye about the unobscured eye from the object. Wack estimates that the function finally normally reaches its full development towards the end of the sixth year.

The statement that I have under test that in *Evolution* and that it is my main purpose in this article to describe, is somewhat similar to one used in the H. A. F. for gauging a photo stereoscopic efficiency.

Assuming, it has been shown in the H. A. F. that there is a definite tendency on the part of myopia, myophoria and phoria who are up to fly into the ground on landing to place the middle needle beyond the other.

middle, or, better from their eyes and hence to the illuminated glass screen, and on the part of hypometropes, myopes and presbyopes "lend the eyes, to do the inverse." In the case of both instruments, the essential principle would appear to be an extension of Helmholtz's fundamental experiment to find the maximum stereoscopic parallax tolerable in the test of a series of individuals, presenting monoscopic orthiophores, *i.e.*, with certain known data. Gladly Helmholtz's experiment may be —



Fig. 2

Two stout pins upright and at the same level, in a plane, normal to the line of sight of the observer, and at a distance of 300 mm. from the observer. A third pin was mounted between the other two and so that, while maintained parallel to them it could be adjusted in the line of sight in such a way as to place it so nearly as could be judged, in the plane of the other two. The pins were fixed 33 mm. apart and the movable one midway between them. In this way the smallest depth that could be discriminated in the line of sight was found to be 2 mm. at a distance of 300 mm. by an observer with an interocular distance of 65 mm.<sup>1</sup>

This is equivalent to a change in parallax angle of approximately one minute of an arc. The observer's distance in the above is that, firstly, a working distance of 300 mm. fails to eliminate the power of accommodation, but in judging distance and, also does not seemingly eliminate the possible

<sup>1</sup> See Wessley, *Medical Research* (Eng. Ser.), 1906, for visual optician.  
On this, — *The Optician*, 5, number 31, 1907.

being different, the projecting ends of the supports are at different points, supports shown in perspective figs. 4 & 5.

As shown in fig. 1, the instrument consists of two components. On the left, fig. 2 and 3, a mounting of the lenses with a sliding adjustment, adjustable in inclination for stereoscopic distance, and a sliding pedestal, figs. 4 and 5, upon which the latter stands, figs. 6 and 7.



FIG. 1.

2) Lens in fig. 2) which can be turned in the direction towards or away from the observer makes it easy for control and reversible motion. The coll seen in figs. 1 and 3 is adjustable to suit the requirements of distance under test. On the right in fig. 1 is part D, the working part of the instrument. This is seen in detail in figs. 2 and 3 and consists essentially of a table supported on knuckles, since three feet in





Fig. 1



Fig. 2

height. On the table, centrally placed along its length, are four vertical supports 1 ft wide apiece, bearing a vertically fixed needle 18 cm. in length, the needle's movable hubward or forward, at the will of the operator, and movable with reference to two smaller needles fixed each 1 cm. from the hubward needle and at the ends of a double centimeter and millimeter scale marked 0-20 cm. in each direction (Fig. 19). The three needles are painted dull black, and each is accurately centered to a diameter of 1 mm. Extending still to part B, on the left of the table two legs 1 and 2 m. fixed a large screen made of three ply wood and also painted dull black. In this screen is a horizontal slit 18 cm. by 4 cm. and 5 cm. above the table surface. On the right of the table is a square box, eight painted dull black. Hinged inside this box is a deep clear light with an opal glass reflector. The front of the box consists of two sheets of ground glass with a sheet of tracing paper between them, the intervening space being and in the same time serving as adequate and uniform illumination of the needles.

The side lamp was on legs 1, 3, 4 and 5 is simply for use when taking a reading with all three needles in position.

Parts A and B are set at a distance from each other so that there is no material of less than 10 cm. between the drawing system and the rear of the scale. The drawing, done on part A, is connected with the trolley by a cord. At the end of the trolley, near the illuminating box is a second wheel working over a pulley and increasing as a spring roller beneath the table. Thus it will be seen that the operator can vary both the distance between and perpendicular of the direction in which he is moving the trolley carrying the needle. The room in which the equipment is set up is kept in complete darkness during a run, and the only illumination is from the lamp lamp behind the ground glass screen. The operator does not see only about 11 cm. of the three needles themselves fully illuminated through the four slit, the trolley, scale, etc., but of course, visible to him, and his task is to align the needle needle with the line fixed once set at the rear of the centimeter and millimeter scale. As his working distance is 1 m. the needles and everything else he sees projected dull black and as there are no colorless shadows or color slopes in the line of sight to avoid here, it becomes obvious that he attains an alignment more well upon his full power of stereopsis.

It has been suggested to me that a possible improvement would be to have only one fixed needle with the translatable needle above it. This, I consider, a definite advance and as will be seen would tend to enhance both accuracy and simplicity in viewing as an individual's visual stereoscopic efficiency.

In addition, the resemblance to the stereoscopic reader would be greater and with a little ingenuity, the translatable needle could have a window mask attached and the fixed needle the silhouette of a handwriting, newspaper, etc.



Small cabin  
on the deck of the ship  
at the time of the  
sinking of the ship

Thus it will be seen that 'stenographic errors' is also a distance of 6 cm., measured in centimeters and millimeters. A man, receiving these assignments in my opinion advisable, then takes from twenty to thirty minutes and has readily been ample in demonstrating competent fingers and stenographs.

The nature of the instrument, its shape and the task required of him is fully demonstrated in every way prior to test. He is then given one or two 'lighting shows' before actual is commenced. The results of these he is allowed to see. The others he does not see until the end of his run. These are finally expressed in chart form on paper accurately squared in centimeters and millimeters. Some readings are called plus and 'short' readings minus. A zero line is marked on each chart and has stenographic fluency is roughly 1/10th of a glance. Every chart shows all necessary details of a man's syllabics sound, e.g., reflexive error (of any) inside a house, readings of hands, irregular distance, etc.

Again it must be emphasized that these charts record stenographs, only on the instrument, and that is the error in each assignment is expressed in centimeters and millimeters with a reading distance of 1 cm. (2.500 mm.) from the stenograph to the rest of the scale. The mean reading of the run of their assignments is obtained by taking the sum of the errors and subtracting them from the sum of the charts or vice versa as the case may be. The resulting figure is then divided in half to whatever the number of assignments recorded: e.g. —

| Readings in cm.         |       |
|-------------------------|-------|
| +                       | 1.0   |
| +                       | 0.5   |
| +                       | 0.5   |
| +                       | 1.0   |
| +                       | 0.4   |
| +                       | 0.6   |
| +                       | 0.2   |
| +                       | 1.2   |
| +                       | 0.6   |
| +                       | 1.0   |
| <hr/>                   |       |
| 18                      | + 9.0 |
| <hr/>                   |       |
| + 5.00 cm. Mean reading |       |

A run of ten runs is shown here for simplicity in demonstrating the worth of observing results.

It is the mean stenography, however, which represents an individual's and stenographic efficiency. This is obtained from the mean reading by adding the minus signs and subtracting the plus signs on each run from the mean reading. In other words, if, following the example above, the mean reading is an over- or plus the 'shorts' are added to it and the

'error' may estimated from  $\sigma$ . The sum of these results is 1.000 and after the number of readings recorded becomes the denominator. To express further, the error resulting in the example was  $\pm 0.09$  cm or  $\pm 0.9$  mm. The mean accuracy will then be determined thus—

| Readings taken           | Distance from mean reading |
|--------------------------|----------------------------|
| + 1.5 (+ 1.5 - 0.50)     | 0.50                       |
| + 2.0 (+ 2.0 - 0.50)     | 1.00                       |
| + 2.5 (+ 2.5 - 0.50)     | 1.50                       |
| + 3.0 (+ 3.0 - 0.50)     | 2.00                       |
| + 3.5 (+ 3.5 - 0.50)     | 2.50                       |
| + 4.0 (+ 4.0 - 0.50)     | 3.00                       |
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| + 5.0 (+ 5.0 - 0.50)     | 4.00                       |
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| + 74.0 (+ 74.0 - 0.50)   | 73.00                      |
| + 74.5 (+ 74.5 - 0.50)   | 73.50                      |
| + 75.0 (+ 75.0 - 0.50)   | 74.00                      |
| + 75.5 (+ 75.5 - 0.50)   | 74.50                      |
| + 76.0 (+ 76.0 - 0.50)   | 75.00                      |
| + 76.5 (+ 76.5 - 0.50)   | 75.50                      |
| + 77.0 (+ 77.0 - 0.50)   | 76.00                      |
| + 77.5 (+ 77.5 - 0.50)   | 76.50                      |
| + 78.0 (+ 78.0 - 0.50)   | 77.00                      |
| + 78.5 (+ 78.5 - 0.50)   | 77.50                      |
| + 79.0 (+ 79.0 - 0.50)   | 78.00                      |
| + 79.5 (+ 79.5 - 0.50)   | 78.50                      |
| + 80.0 (+ 80.0 - 0.50)   | 79.00                      |
| + 80.5 (+ 80.5 - 0.50)   | 79.50                      |
| + 81.0 (+ 81.0 - 0.50)   | 80.00                      |
| + 81.5 (+ 81.5 - 0.50)   | 80.50                      |
| + 82.0 (+ 82.0 - 0.50)   | 81.00                      |
| + 82.5 (+ 82.5 - 0.50)   | 81.50                      |
| + 83.0 (+ 83.0 - 0.50)   | 82.00                      |
| + 83.5 (+ 83.5 - 0.50)   | 82.50                      |
| + 84.0 (+ 84.0 - 0.50)   | 83.00                      |
| + 84.5 (+ 84.5 - 0.50)   | 83.50                      |
| + 85.0 (+ 85.0 - 0.50)   | 84.00                      |
| + 85.5 (+ 85.5 - 0.50)   | 84.50                      |
| + 86.0 (+ 86.0 - 0.50)   | 85.00                      |
| + 86.5 (+ 86.5 - 0.50)   | 85.50                      |
| + 87.0 (+ 87.0 - 0.50)   | 86.00                      |
| + 87.5 (+ 87.5 - 0.50)   | 86.50                      |
| + 88.0 (+ 88.0 - 0.50)   | 87.00                      |
| + 88.5 (+ 88.5 - 0.50)   | 87.50                      |
| + 89.0 (+ 89.0 - 0.50)   | 88.00                      |
| + 89.5 (+ 89.5 - 0.50)   | 88.50                      |
| + 90.0 (+ 90.0 - 0.50)   | 89.00                      |
| + 90.5 (+ 90.5 - 0.50)   | 89.50                      |
| + 91.0 (+ 91.0 - 0.50)   | 90.00                      |
| + 91.5 (+ 91.5 - 0.50)   | 90.50                      |
| + 92.0 (+ 92.0 - 0.50)   | 91.00                      |
| + 92.5 (+ 92.5 - 0.50)   | 91.50                      |
| + 93.0 (+ 93.0 - 0.50)   | 92.00                      |
| + 93.5 (+ 93.5 - 0.50)   | 92.50                      |
| + 94.0 (+ 94.0 - 0.50)   | 93.00                      |
| + 94.5 (+ 94.5 - 0.50)   | 93.50                      |
| + 95.0 (+ 95.0 - 0.50)   | 94.00                      |
| + 95.5 (+ 95.5 - 0.50)   | 94.50                      |
| + 96.0 (+ 96.0 - 0.50)   | 95.00                      |
| + 96.5 (+ 96.5 - 0.50)   | 95.50                      |
| + 97.0 (+ 97.0 - 0.50)   | 96.00                      |
| + 97.5 (+ 97.5 - 0.50)   | 96.50                      |
| + 98.0 (+ 98.0 - 0.50)   | 97.00                      |
| + 98.5 (+ 98.5 - 0.50)   | 97.50                      |
| + 99.0 (+ 99.0 - 0.50)   | 98.00                      |
| + 99.5 (+ 99.5 - 0.50)   | 98.50                      |
| + 100.0 (+ 100.0 - 0.50) | 99.00                      |
| + 100.5 (+ 100.5 - 0.50) | 99.50                      |
| + 101.0 (+ 101.0 - 0.50) | 100.00                     |
| + 101.5 (+ 101.5 - 0.50) | 100.50                     |
| + 102.0 (+ 102.0 - 0.50) | 101.00                     |
| + 102.5 (+ 102.5 - 0.50) | 101.50                     |
| + 103.0 (+ 103.0 - 0.50) | 102.00                     |
| + 103.5 (+ 103.5 - 0.50) | 102.50                     |
| + 104.0 (+ 104.0 - 0.50) | 103.00                     |
| + 104.5 (+ 104.5 - 0.50) | 103.50                     |
| + 105.0 (+ 105.0 - 0.50) | 104.00                     |
| + 105.5 (+ 105.5 - 0.50) | 104.50                     |
| + 106.0 (+ 106.0 - 0.50) | 105.00                     |
| + 106.5 (+ 106.5 - 0.50) | 105.50                     |
| + 107.0 (+ 107.0 - 0.50) | 106.00                     |
| + 107.5 (+ 107.5 - 0.50) | 106.50                     |
| + 108.0 (+ 108.0 - 0.50) | 107.00                     |
| + 108.5 (+ 108.5 - 0.50) | 107.50                     |
| + 109.0 (+ 109.0 - 0.50) | 108.00                     |
| + 109.5 (+ 109.5 - 0.50) | 108.50                     |
| + 110.0 (+ 110.0 - 0.50) | 109.00                     |
| + 110.5 (+ 110.5 - 0.50) | 109.50                     |
| + 111.0 (+ 111.0 - 0.50) | 110.00                     |
| + 111.5 (+ 111.5 - 0.50) | 110.50                     |
| + 112.0 (+ 112.0 - 0.50) | 111.00                     |
| + 112.5 (+ 112.5 - 0.50) | 111.50                     |
| + 113.0 (+ 113.0 - 0.50) | 112.00                     |
| + 113.5 (+ 113.5 - 0.50) | 112.50                     |
| + 114.0 (+ 114.0 - 0.50) | 113.00                     |
| + 114.5 (+ 114.5 - 0.50) | 113.50                     |
| + 115.0 (+ 115.0 - 0.50) | 114.00                     |
| + 115.5 (+ 115.5 - 0.50) | 114.50                     |
| + 116.0 (+ 116.0 - 0.50) | 115.00                     |
| + 116.5 (+ 116.5 - 0.50) | 115.50                     |
| + 117.0 (+ 117.0 - 0.50) | 116.00                     |
| + 117.5 (+ 117.5 - 0.50) | 116.50                     |
| + 118.0 (+ 118.0 - 0.50) | 117.00                     |
| + 118.5 (+ 118.5 - 0.50) | 117.50                     |
| + 119.0 (+ 119.0 - 0.50) | 118.00                     |
| + 119.5 (+ 119.5 - 0.50) | 118.50                     |
| + 120.0 (+ 120.0 - 0.50) | 119.00                     |
| + 120.5 (+ 120.5 - 0.50) | 119.50                     |
| + 121.0 (+ 121.0 - 0.50) | 120.00                     |
| + 121.5 (+ 121.5 - 0.50) | 120.50                     |
| + 122.0 (+ 122.0 - 0.50) | 121.00                     |
| + 122.5 (+ 122.5 - 0.50) | 121.50                     |
| + 123.0 (+ 123.0 - 0.50) | 122.00                     |
| + 123.5 (+ 123.5 - 0.50) | 122.50                     |
| + 124.0 (+ 124.0 - 0.50) | 123.00                     |
| + 124.5 (+ 124.5 - 0.50) | 123.50                     |
| + 125.0 (+ 125.0 - 0.50) | 124.00                     |
| + 125.5 (+ 125.5 - 0.50) | 124.50                     |
| + 126.0 (+ 126.0 - 0.50) | 125.00                     |
| + 126.5 (+ 126.5 - 0.50) | 125.50                     |
| + 127.0 (+ 127.0 - 0.50) | 126.00                     |
| + 127.5 (+ 127.5 - 0.50) | 126.50                     |
| + 128.0 (+ 128.0 - 0.50) | 127.00                     |
| + 128.5 (+ 128.5 - 0.50) | 127.50                     |
| + 129.0 (+ 129.0 - 0.50) | 128.00                     |
| + 129.5 (+ 129.5 - 0.50) | 128.50                     |
| + 130.0 (+ 130.0 - 0.50) | 129.00                     |
| + 130.5 (+ 130.5 - 0.50) | 129.50                     |
| + 131.0 (+ 131.0 - 0.50) | 130.00                     |
| + 131.5 (+ 131.5 - 0.50) | 130.50                     |
| + 132.0 (+ 132.0 - 0.50) | 131.00                     |
| + 132.5 (+ 132.5 - 0.50) | 131.50                     |
| + 133.0 (+ 133.0 - 0.50) | 132.00                     |
| + 133.5 (+ 133.5 - 0.50) | 132.50                     |
| + 134.0 (+ 134.0 - 0.50) | 133.00                     |
| + 134.5 (+ 134.5 - 0.50) | 133.50                     |
| + 135.0 (+ 135.0 - 0.50) | 134.00                     |
| + 135.5 (+ 135.5 - 0.50) | 134.50                     |
| + 136.0 (+ 136.0 - 0.50) | 135.00                     |
| + 136.5 (+ 136.5 - 0.50) | 135.50                     |
| + 137.0 (+ 137.0 - 0.50) | 136.00                     |
| + 137.5 (+ 137.5 - 0.50) | 136.50                     |
| + 138.0 (+ 138.0 - 0.50) | 137.00                     |
| + 138.5 (+ 138.5 - 0.50) | 137.50                     |
| + 139.0 (+ 139.0 - 0.50) | 138.00                     |
| + 139.5 (+ 139.5 - 0.50) | 138.50                     |
| + 140.0 (+ 140.0 - 0.50) | 139.00                     |
| + 140.5 (+ 140.5 - 0.50) | 139.50                     |
| + 141.0 (+ 141.0 - 0.50) | 140.00                     |
| + 141.5 (+ 141.5 - 0.50) | 140.50                     |
| + 142.0 (+ 142.0 - 0.50) | 141.00                     |
| + 142.5 (+ 142.5 - 0.50) | 141.50                     |
| + 143.0 (+ 143.0 - 0.50) | 142.00                     |
| + 143.5 (+ 143.5 - 0.50) | 142.50                     |
| + 144.0 (+ 144.0 - 0.50) | 143.00                     |
| + 144.5 (+ 144.5 - 0.50) | 143.50                     |
| + 145.0 (+ 145.0 - 0.50) | 144.00                     |
| + 145.5 (+ 145.5 - 0.50) | 144.50                     |
| + 146.0 (+ 146.0 - 0.50) | 145.00                     |
| + 146.5 (+ 146.5 - 0.50) | 145.50                     |
| + 147.0 (+ 147.0 - 0.50) | 146.00                     |
| + 147.5 (+ 147.5 - 0.50) | 146.50                     |
| + 148.0 (+ 148.0 - 0.50) | 147.00                     |
| + 148.5 (+ 148.5 - 0.50) | 147.50                     |
| + 149.0 (+ 149.0 - 0.50) | 148.00                     |
| + 149.5 (+ 149.5 - 0.50) | 148.50                     |
| + 150.0 (+ 150.0 - 0.50) | 149.00                     |
| + 150.5 (+ 150.5 - 0.50) | 149.50                     |
| + 151.0 (+ 151.0 - 0.50) | 150.00                     |
| + 151.5 (+ 151.5 - 0.50) | 150.50                     |
| + 152.0 (+ 152.0 - 0.50) | 151.00                     |
| + 152.5 (+ 152.5 - 0.50) | 151.50                     |
| + 153.0 (+ 153.0 - 0.50) | 152.00                     |
| + 153.5 (+ 153.5 - 0.50) | 152.50                     |
| + 154.0 (+ 154.0 - 0.50) | 153.00                     |
| + 154.5 (+ 154.5 - 0.50) | 153.50                     |
| + 155.0 (+ 155.0 - 0.50) | 154.00                     |
| + 155.5 (+ 155.5 - 0.50) | 154.50                     |
| + 156.0 (+ 156.0 - 0.50) | 155.00                     |
| + 156.5 (+ 156.5 - 0.50) | 155.50                     |
| + 157.0 (+ 157.0 - 0.50) | 15                         |

a series of imaginary triangles having as its vertices the distance  $s$  common base and various points, in the objects considered, as apices.

In Fig. 6,  $A$  and  $B$  are points representing the two fixed needles at the axis of the table in the tester (see Fig. 5).  $P$  is also a point and stands for the movable needle.  $P$  bears a certain relationship to  $A$  and  $B$ .  $E_1-E_2$  ( $h$ ) is the stereoscopic distance.

The angles  $E_1AK$  and  $E_2BK$  are equal and are used by the observer as reference angles, and he is told, under test as to judge when the angle  $E_1PE_2$  is equal to them. If, as has been suggested, there was only one needle and consequently a single reference angle it becomes more obvious that the change of angle is definable as a change of parallel.

Referring then to Fig. 7 and using the same lettering as in Fig. 6 we can say that the difference between the angles  $E_1PE_2$  and  $E_1AE_2$  is always expressed by the angle  $\theta$  (AKP).



FIG. 6



FIG. 7

If  $B$ , the range ( $B$  is 5,000 mm)  $\therefore s$ , the distance between  $E_1-E_2$  ( $h$ ) and  $A$ , the axis of the table, then  $B$  is obviously large compared with  $h$ .

Observe that the value of the angle  $\theta$  will be expressed in circular measure and that it always bears a definite relationship to the difference between  $AE_1$  and  $PE_1$  ( $\therefore$ , the difference in range measured referred to as  $\Delta R$ ).

$$\therefore \text{As one range } AE_1/E_2, \therefore E_1/AE_2 = \frac{h}{B_1}$$

$$\text{As another range } PE_1/E_2, \therefore E_2/PE_1 = \frac{h}{B_2}$$

$$\therefore \frac{E_1/AE_2}{B_1} = \frac{E_2/PE_1}{B_2} = \theta$$

$$= \frac{B_1 - B_2}{B_1 B_2}$$

(1) It must be noted by Deane (L. M. Brown, B.Sc., D.Phil., D.W. Lefroy, from results by his students and help in the context of the formula is as following

If  $B_0$  is very nearly equal to  $B$  then  $\delta_0$  very nearly equals  $\delta$  and is very small—

$$\begin{array}{lcl} \delta_0 - \delta & \delta\theta \text{ is small quantity compared with } \delta_0 & \\ \delta_0 = B_0 & \delta B & \delta_0 \end{array}$$

And  $B_0 \propto B$  may be considered as 1. Therefore,  $\delta\theta = \frac{\delta \cdot \delta B}{B}$

The mean constancy of a run of  $\delta\theta$  elements will then be expressed by  $\frac{1}{K}$  in centimetres and milliseconds. The instantaneous distance in metres. The smallest change of parallel angle which the observer can detect monotonically is  $\frac{1}{2} \delta\theta = B$ , then  $\frac{1}{2} \delta$  is 65 mm. and  $B_0$  is 6 to 10,000 mm. we can write—

Then I second of sec =  $\frac{1}{100000}$  of a second.

$$\begin{aligned} \delta\theta &= \frac{\delta \cdot \delta B}{B} = \frac{\delta}{B} \times \frac{\delta \cdot B}{B} \times \frac{100000}{100000} \\ &= \frac{65}{10} \times \frac{10}{10} \times \frac{100000}{100000} \\ &= 0.001 \delta B \text{ seconds of sec.} \end{aligned}$$

Now if the mean constancy of  $B$  had been 10 mm. for an observer the smallest change of angle ( $\delta\theta$ ) that he could register was more probably, would be 1.72 seconds.

Before proceeding it must be emphasized that these calculations can in no way legitimate for such accurate operation as, telescopic, bridge, weather conditions etc. Any of these factors may either at times or absolutely usually, what can be defined as the practicable  $\frac{1}{2} \delta\theta$  under ideal test conditions for any observer.

Bridge is perhaps the most worthy of consideration and as an observer recognizes the question of practical what more is concerned. On the other hand it may be argued that such bridge can be quickly corrected by a short period of rest and then not produce general bridge. In the example under consideration 1.72 ( $\delta\theta$ ) may be considered as a constant on the basis where the magnification is 100 and the actual I.O.D. only is considered.

The additional factors that must now be dealt with are: (i) The magnification of the magnifier =  $M = 10$ . The base length which may not be treated as 10 as it is the actual I.O.D. (ii) A given better magnification expressed as  $B$ .

Suppose  $B = 25$ ,  $B = 10$  mm. and  $B = 10000$  mm. Then for the magnifying power  $M$ , the change in angle at the eye ( $\delta\theta$ ) is dependent on a change of angle  $\frac{\delta\theta}{M}$  on the foot and therefore—

$$\begin{aligned} \frac{\delta\theta}{M} &= \frac{\delta \times \delta B}{B} \times \frac{100000}{100000} \text{ or } \frac{1.72}{10} = \frac{65 \times \delta B}{100000} \\ \text{and } \delta B &= \frac{1.72 \times 100000}{25 \times 10} = 68800 = 68.7 \text{ mm.} \end{aligned}$$





data tend to show that a stereoscopic efficiency of only 4 per cent would be rare in quite common anisometropic eyes.

I have further noticed that a low degree of hypermetropia (up to +0.5 D), providing there is no astigmatism, is in general compatible with a good reading and that there has been no evidence of fatigue or asthenopia during the term that have been under test. Again, a low degree of myopia (up to 2' or 3' prism diopters) does not appear to be a disturbing factor and, in general, balance maintained at the constant range.

| Age      | Sex | Eye | Ref. v. | Visual Acuity, J. 18 cm. | St. v. | St. v. | St. v. |
|----------|-----|-----|---------|--------------------------|--------|--------|--------|
| 20 years | M   | R   | 0.00    | 1.00                     | 0.00   | 0.00   | 0.00   |

|               |        |        |        |        |        |        |        |
|---------------|--------|--------|--------|--------|--------|--------|--------|
| Hypermetropia | 0.00 D | 0.00 D | 0.00 D | 0.00 D | 0.00 D | 0.00 D | 0.00 D |
| Myopia        | 0.00 D | 0.00 D | 0.00 D | 0.00 D | 0.00 D | 0.00 D | 0.00 D |

Stimulus: 100 words  
 Distance: 18 cm.  
 Time: 10 min.



Chart 1

changes rapid than physiological. These changes indicate good test results noted. Charts A and B are little cases of anisometropia, as they have reached the minimum degree of asthenopia after the test, but they are not normal eyes. Chart C shows the best of the conditions, as the graph, in data, 100 words, shows the fact that a low degree of hypermetropia is present in each eye.

It is interesting to note the visual acuity and regular vision of these three charts.



will be vastly different and more subtle than those of even the immediate past. "Isolated" working in the English Service for January, 1921, seems to me aptly to sum things up in his "The Capital Way Again" when he writes:

Isolation was an achievement. The new horizons are the working above and down below. . . . In war and in peace also we still think and often agree in two dimensions but we view a wider apprehension of the third dimension is quickly coming. Microscopy is perhaps the latest achievement of those reports on his reported progress, stated that it is to exploit this "vision" to its utmost, and in substance what is the same dream—that is the long run, it must be proven that two eyes are better than one.

Much of what I have written may seem almost dreamy, but even so it is that the higher sensory ratings of the future must be known to come before—and with that knowledge a full understanding of the limitations of the human element and the considerations that must be integrated with future assessments of ability.

My thanks are due to Commander Holland and the Experimental Staff of H. M. S. Kestrel for their great consideration in making the statement, here considered, for me. My gratitude is also due to my wife whose excellent penmanship has helped me so much in collecting, in detail, the many charts referred to above.

#### THE INFLUENCE OF MINUTE QUANTITIES OF METALLIC SALTS IN WATER ON ITS BACTERIOLOGICAL CONTENT

By ROBERT FREEMAN, D. L. BENTLEY, D. O. & M. R. N.

and

ROBERT C. FREDERICK

Received it was suggested by Mr. R. C. Frederick, Demonstrator in Hygiene and Sanitary Chemistry at the Royal Naval Medical School, Greenwich that minute concentrations of a water probably affected the results of its bacteriological examination.

The salts used in this research were of those metals most commonly found in water stored in metal tanks or conveyed in pipes of the same material, namely lead, copper, iron and zinc. The amount of the metal present in these tests was within the limit of possible contamination. A considerable proportion of the drinking water stored in the Navy has been decided not to be stored, from an unsuspicious and method of manufacture, particularly liable to metallic contamination, especially copper.

The results of this preliminary investigation will be completed and recorded.

Standard solutions of lead (acetate), copper (hydroxide), iron (chloride)

or



again, equally against the efficiency of the histological examination of such a water, as against the chemical examination. The tables represent the first experiment in series A, and its repetition in series B.

TABLE "B" — SERIES "A" — WATER FROM HALL POND, QUINCY, ILLINOIS  
(EXCEPT IN EACH CASE, 10.0-10.0 PARTS PER 100-000)

| Sample No. | With chlorine                          | Untreated sample  | Lead  | Copper  | Iron  | Pb.  |
|------------|--|---|---|---|---|--|
| 1          | 1st<br>2nd<br>3rd<br>4th<br>5th<br>6th | Negative<br>N.I. turbidity<br>Turbidity<br>N.I. turbidity<br>N.I.<br>N.I.         | Negative<br>N.I. turbidity<br>Turbidity<br>N.I. turbidity<br>—<br>—               | Negative<br>—<br>—<br>—<br>—<br>—                                   | Negative<br>N.I. turbidity<br>Turbidity<br>N.I. turbidity<br>N.I.<br>N.I. turbidity | Negative<br>N.I.<br>N.I. turbidity<br>N.I.<br>N.I.<br>N.I. turbidity             |
| 2          | 1st<br>2nd<br>3rd<br>4th<br>5th<br>6th | Negative<br>N.I. turbidity<br>Turbidity<br>N.I. turbidity<br>—<br>—               | Negative<br>N.I. turbidity<br>Turbidity<br>N.I. turbidity<br>—<br>—               | Negative<br>N.I. turbidity<br>Turbidity<br>N.I. turbidity<br>—<br>— | Negative<br>N.I. turbidity<br>Turbidity<br>N.I. turbidity<br>—<br>—                 | Negative<br>N.I. turbidity<br>Turbidity<br>N.I. turbidity<br>—<br>—              |
| 3          | 1st<br>2nd<br>3rd<br>4th<br>5th<br>6th | N.I. turbidity<br>Turbidity<br>N.I. turbidity<br>Turbidity<br>N.I. turbidity<br>— | N.I. turbidity<br>Turbidity<br>N.I. turbidity<br>Turbidity<br>N.I. turbidity<br>— | Negative<br>—<br>—<br>—<br>—<br>—                                   | N.I. turbidity<br>Turbidity<br>N.I. turbidity<br>Turbidity<br>N.I. turbidity<br>—   | Negative<br>N.I. turbidity<br>N.I. turbidity<br>Turbidity<br>N.I. turbidity<br>— |
| 4          | 1st<br>2nd<br>3rd<br>4th<br>5th<br>6th | Turbidity<br>N.I. turbidity<br>Turbidity<br>N.I. turbidity<br>—<br>—              | Negative<br>Turbidity<br>N.I. turbidity<br>Turbidity<br>—<br>—                    | Turbidity<br>—<br>—<br>—<br>—<br>—                                  | Turbidity<br>—<br>—<br>—<br>—<br>—  | N.I. turbidity<br>N.I. turbidity<br>N.I. turbidity<br>N.I. turbidity<br>—<br>—   |

(1) First 10.0 cc. treated by 10 cc. 0.1% I.C.P. (10.0-10.0 parts per 100-000)

Number = 1 first in series, histological examination made. When used against surface. Treated in no case a metal present in the water of 10.0 parts per 100-000, all cases the small lead, eight hours.

At the end of the period the sample was incubated in a petri dish with the small amount of water for the histological examination of water in the large Noval 5000. (10.0-10.0 parts per 100-000) and 10.0 cc. of the sample is mixed with gelatin and after 10.0 cc. placed in petri dish. The effluent is mixed with gelatin and 10.0 cc. and the agar plates at 37°C. (Johnson & Johnson, 1910, 1911, 1912, 1913, 1914, 1915, 1916, 1917, 1918, 1919, 1920, 1921, 1922, 1923, 1924, 1925, 1926, 1927, 1928, 1929, 1930, 1931, 1932, 1933, 1934, 1935, 1936, 1937, 1938, 1939, 1940, 1941, 1942, 1943, 1944, 1945, 1946, 1947, 1948, 1949, 1950, 1951, 1952, 1953, 1954, 1955, 1956, 1957, 1958, 1959, 1960, 1961, 1962, 1963, 1964, 1965, 1966, 1967, 1968, 1969, 1970, 1971, 1972, 1973, 1974, 1975, 1976, 1977, 1978, 1979, 1980, 1981, 1982, 1983, 1984, 1985, 1986, 1987, 1988, 1989, 1990, 1991, 1992, 1993, 1994, 1995, 1996, 1997, 1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024, 2025, 2026, 2027, 2028, 2029, 2030, 2031, 2032, 2033, 2034, 2035, 2036, 2037, 2038, 2039, 2040, 2041, 2042, 2043, 2044, 2045, 2046, 2047, 2048, 2049, 2050, 2051, 2052, 2053, 2054, 2055, 2056, 2057, 2058, 2059, 2060, 2061, 2062, 2063, 2064, 2065, 2066, 2067, 2068, 2069, 2070, 2071, 2072, 2073, 2074, 2075, 2076, 2077, 2078, 2079, 2080, 2081, 2082, 2083, 2084, 2085, 2086, 2087, 2088, 2089, 2090, 2091, 2092, 2093, 2094, 2095, 2096, 2097, 2098, 2099, 2100, 2101, 2102, 2103, 2104, 2105, 2106, 2107, 2108, 2109, 2110, 2111, 2112, 2113, 2114, 2115, 2116, 2117, 2118, 2119, 2120, 2121, 2122, 2123, 2124, 2125, 2126, 2127, 2128, 2129, 2130, 2131, 2132, 2133, 2134, 2135, 2136, 2137, 2138, 2139, 2140, 2141, 2142, 2143, 2144, 2145, 2146, 2147, 2148, 2149, 2150, 2151, 2152, 2153, 2154, 2155, 2156, 2157, 2158, 2159, 2160, 2161, 2162, 2163, 2164, 2165, 2166, 2167, 2168, 2169, 2170, 2171, 2172, 2173, 2174, 2175, 2176, 2177, 2178, 2179, 2180, 2181, 2182, 2183, 2184, 2185, 2186, 2187, 2188, 2189, 2190, 2191, 2192, 2193, 2194, 2195, 2196, 2197, 2198, 2199, 2200, 2201, 2202, 2203, 2204, 2205, 2206, 2207, 2208, 2209, 2210, 2211, 2212, 2213, 2214, 2215, 2216, 2217, 2218, 2219, 2220, 2221, 2222, 2223, 2224, 2225, 2226, 2227, 2228, 2229, 2230, 2231, 2232, 2233, 2234, 2235, 2236, 2237, 2238, 2239, 2240, 2241, 2242, 2243, 2244, 2245, 2246, 2247, 2248, 2249, 2250, 2251, 2252, 2253, 2254, 2255, 2256, 2257, 2258, 2259, 2260, 2261, 2262, 2263, 2264, 2265, 2266, 2267, 2268, 2269, 2270, 2271, 2272, 2273, 2274, 2275, 2276, 2277, 2278, 2279, 2280, 2281, 2282, 2283, 2284, 2285, 2286, 2287, 2288, 2289, 2290, 2291, 2292, 2293, 2294, 2295, 2296, 2297, 2298, 2299, 2300, 2301, 2302, 2303, 2304, 2305, 2306, 2307, 2308, 2309, 2310, 2311, 2312, 2313, 2314, 2315, 2316, 2317, 2318, 2319, 2320, 2321, 2322, 2323, 2324, 2325, 2326, 2327, 2328, 2329, 2330, 2331, 2332, 2333, 2334, 2335, 2336, 2337, 2338, 2339, 2340, 2341, 2342, 2343, 2344, 2345, 2346, 2347, 2348, 2349, 2350, 2351, 2352, 2353, 2354, 2355, 2356, 2357, 2358, 2359, 2360, 2361, 2362, 2363, 2364, 2365, 2366, 2367, 2368, 2369, 2370, 2371, 2372, 2373, 2374, 2375, 2376, 2377, 2378, 2379, 2380, 2381, 2382, 2383, 2384, 2385, 2386, 2387, 2388, 2389, 2390, 2391, 2392, 2393, 2394, 2395, 2396, 2397, 2398, 2399, 2400, 2401, 2402, 2403, 2404, 2405, 2406, 2407, 2408, 2409, 2410, 2411, 2412, 2413, 2414, 2415, 2416, 2417, 2418, 2419, 2420, 2421, 2422, 2423, 2424, 2425, 2426, 2427, 2428, 2429, 2430, 2431, 2432, 2433, 2434, 2435, 2436, 2437, 2438, 2439, 2440, 2441, 2442, 2443, 2444, 2445, 2446, 2447, 2448, 2449, 2450, 2451, 2452, 2453, 2454, 2455, 2456, 2457, 2458, 2459, 2460, 2461, 2462, 2463, 2464, 2465, 2466, 2467, 2468, 2469, 2470, 2471, 2472, 2473, 2474, 2475, 2476, 2477, 2478, 2479, 2480, 2481, 2482, 2483, 2484, 2485, 2486, 2487, 2488, 2489, 2490, 2491, 2492, 2493, 2494, 2495, 2496, 2497, 2498, 2499, 2500, 2501, 2502, 2503, 2504, 2505, 2506, 2507, 2508, 2509, 2510, 2511, 2512, 2513, 2514, 2515, 2516, 2517, 2518, 2519, 2520, 2521, 2522, 2523, 2524, 2525, 2526, 2527, 2528, 2529, 2530, 2531, 2532, 2533, 2534, 2535, 2536, 2537, 2538, 2539, 2540, 2541, 2542, 2543, 2544, 2545, 2546, 2547, 2548, 2549, 2550, 2551, 2552, 2553, 2554, 2555, 2556, 2557, 2558, 2559, 2560, 2561, 2562, 2563, 2564, 2565, 2566, 2567, 2568, 2569, 2570, 2571, 2572, 2573, 2574, 2575, 2576, 2577, 2578, 2579, 2580, 2581, 2582, 2583, 2584, 2585, 2586, 2587, 2588, 2589, 2590, 2591, 2592, 2593, 2594, 2595, 2596, 2597, 2598, 2599, 2600, 2601, 2602, 2603, 2604, 2605, 2606, 2607, 2608, 2609, 2610, 2611, 2612, 2613, 2614, 2615, 2616, 2617, 2618, 2619, 2620, 2621, 2622, 2623, 2624, 2625, 2626, 2627, 2628, 2629, 2630, 2631, 2632, 2633, 2634, 2635, 2636, 2637, 2638, 2639, 2640, 2641, 2642, 2643, 2644, 2645, 2646, 2647, 2648, 2649, 2650, 2651, 2652, 2653, 2654, 2655, 2656, 2657, 2658, 2659, 2660, 2661, 2662, 2663, 2664, 2665, 2666, 2667, 2668, 2669, 2670, 2671, 2672, 2673, 2674, 2675, 2676, 2677, 2678, 2679, 2680, 2681, 2682, 2683, 2684, 2685, 2686, 2687, 2688, 2689, 2690, 2691, 2692, 2693, 2694, 2695, 2696, 2697, 2698, 2699, 2700, 2701, 2702, 2703, 2704, 2705, 2706, 2707, 2708, 2709, 2710, 2711, 2712, 2713, 2714, 2715, 2716, 2717, 2718, 2719, 2720, 2721, 2722, 2723, 2724, 2725, 2726, 2727, 2728, 2729, 2730, 2731, 2732, 2733, 2734, 2735, 2736, 2737, 2738, 2739, 2740, 2741, 2742, 2743, 2744, 2745, 2746, 2747, 2748, 2749, 2750, 2751, 2752, 2753, 2754, 2755, 2756, 2757, 2758, 2759, 2760, 2761, 2762, 2763, 2764, 2765, 2766, 2767, 2768, 2769, 2770, 2771, 2772, 2773, 2774, 2775, 2776, 2777, 2778, 2779, 2780, 2781, 2782, 2783, 2784, 2785, 2786, 2787, 2788, 2789, 2790, 2791, 2792, 2793, 2794, 2795, 2796, 2797, 2798, 2799, 2800, 2801, 2802, 2803, 2804, 2805, 2806, 2807, 2808, 2809, 2810, 2811, 2812, 2813, 2814, 2815, 2816, 2817, 2818, 2819, 2820, 2821, 2822, 2823, 2824, 2825, 2826, 2827, 2828, 2829, 2830, 2831, 2832, 2833, 2834, 2835, 2836, 2837, 2838, 2839, 2840, 2841, 2842, 2843, 2844, 2845, 2846, 2847, 2848, 2849, 2850, 2851, 2852, 2853, 2854, 2855, 2856, 2857, 2858, 2859, 2860, 2861, 2862, 2863, 2864, 2865, 2866, 2867, 2868, 2869, 2870, 2871, 2872, 2873, 2874, 2875, 2876, 2877, 2878, 2879, 2880, 2881, 2882, 2883, 2884, 2885, 2886, 2887, 2888, 2889, 2890, 2891, 2892, 2893, 2894, 2895, 2896, 2897, 2898, 2899, 2900, 2901, 2902, 2903, 2904, 2905, 2906, 2907, 2908, 2909, 2910, 2911, 2912, 2913, 2914, 2915, 2916, 2917, 2918, 2919, 2920, 2921, 2922, 2923, 2924, 2925, 2926, 2927, 2928, 2929, 2930, 2931, 2932, 2933, 2934, 2935, 2936, 2937, 2938, 2939, 2940, 2941, 2942, 2943, 2944, 2945, 2946, 2947, 2948, 2949, 2950, 2951, 2952, 2953, 2954, 2955, 2956, 2957, 2958, 2959, 2960, 2961, 2962, 2963, 2964, 2965, 2966, 2967, 2968, 2969, 2970, 2971, 2972, 2973, 2974, 2975, 2976, 2977, 2978, 2979, 2980, 2981, 2982, 2983, 2984, 2985, 2986, 2987, 2988, 2989, 2990, 2991, 2992, 2993, 2994, 2995, 2996, 2997, 2998, 2999, 3000, 3001, 3002, 3003, 3004, 3005, 3006, 3007, 3008, 3009, 3010, 3011, 3012, 3013, 3014, 3015, 3016, 3017, 3018, 3019, 3020, 3021, 3022, 3023, 3024, 3025, 3026, 3027, 3028, 3029, 3030, 3031, 3032, 3033, 3034, 3035, 3036, 3037, 3038, 3039, 3040, 3041, 3042, 3043, 3044, 3045, 3046, 3047, 3048, 3049, 3050, 3051, 3052, 3053, 3054, 3055, 3056, 3057, 3058, 3059, 3060, 3061, 3062, 3063, 3064, 3065, 3066, 3067, 3068, 3069, 3070, 3071, 3072, 3073, 3074, 3075, 3076, 3077, 3078, 3079, 3080, 3081, 3082, 3083, 3084, 3085, 3086, 3087, 3088, 3089, 3090, 3091, 3092, 3093, 3094, 3095, 3096, 3097, 3098, 3099, 3100, 3101, 3102, 3103, 3104, 3105, 3106, 3107, 3108, 3109, 3110, 3111, 3112, 3113, 3114, 3115, 3116, 3117, 3118, 3119, 3120, 3121, 3122, 3123, 3124, 3125, 3126, 3127, 3128, 3129, 3130, 3131, 3132, 3133, 3134, 3135, 3136, 3137, 3138, 3139, 3140, 3141, 3142, 3143, 3144, 3145, 3146, 3147, 3148, 3149, 3150, 3151, 3152, 3153, 3154, 3155, 3156, 3157, 3158, 3159, 3160, 3161, 3162, 3163, 3164, 3165, 3166, 3167, 3168, 3169, 3170, 3171, 3172, 3173, 3174, 3175, 3176, 3177, 3178, 3179, 3180, 3181, 3182, 3183, 3184, 3185, 3186, 3187, 3188, 3189, 3190, 3191, 3192, 3193, 3194, 3195, 3196, 3197, 3198, 3199, 3200, 3201, 3202, 3203, 3204, 3205, 3206, 3207, 3208, 3209, 3210, 3211, 3212, 3213, 3214, 3215, 3216, 3217, 3218, 3219, 3220, 3221, 3222, 3223, 3224, 3225, 3226, 3227, 3228, 3229, 3230, 3231, 3232, 3233, 3234, 3235, 3236, 3237, 3238, 3239, 3240, 3241, 3242, 3243, 3244, 3245, 3246, 3247, 3248, 3249, 3250, 3251, 3252, 3253, 3254, 3255, 3256, 3257, 3258, 3259, 3260, 3261, 3262, 3263, 3264, 3265, 3266, 3267, 3268, 3269, 3270, 3271, 3272, 3273, 3274, 3275, 3276, 3277, 3278, 3279, 3280, 3281, 3282, 3283, 3284, 3285, 3286, 3287, 3288, 3289, 3290, 3291, 3292, 3293, 3294, 3295, 3296, 3297, 3298, 3299, 3300, 3301, 3302, 3303, 3304, 3305, 3306, 3307, 3308, 3309, 3310, 3311, 3312, 3313, 3314, 3315, 3316, 3317, 3318, 3319, 3320, 3321, 3322, 3323, 3324, 3325, 3326, 3327, 3328, 3329, 3330, 3331, 3332, 3333, 3334, 3335, 3336, 3337, 3338, 3339, 3340, 3341, 3342, 3343, 3344, 3345, 3346, 3347, 3348, 3349, 3350, 3351, 3352, 3353, 3354, 3355, 3356, 3357, 3358, 3359, 3360, 3361, 3362, 3363, 3364, 3365, 3366, 3367, 3368, 3369, 3370, 3371, 3372, 3373, 3374, 3375, 3376, 3377, 3378, 3379, 3380, 3381, 3382, 3383, 3384, 3385, 3386, 3387, 3388, 3389, 3390, 3391, 3392, 3393, 3394, 3395, 3396, 3397, 3398, 3399, 3400, 3401, 3402, 3403, 3404, 3405, 3406, 3407, 3408, 3409, 3410, 3411, 3412, 3413, 3414, 3415, 3416, 3417, 3418, 3419, 3420, 3421, 3422, 3423, 3424, 3425, 3426, 3427, 3428, 3429, 3430, 3431, 3432, 3433, 3434, 3435, 3436, 3437, 3438, 3439, 3440, 3441, 3442, 3443, 3444, 3445, 3446, 3447, 3448, 3449, 3450, 3451, 3452, 3453, 3454, 3455, 3456, 3457, 3458, 3459, 3460, 3461, 3462, 3463, 3464, 3465, 3466, 3467, 3468, 3469, 3470, 3471, 3472, 3473, 3474, 3475, 3476, 3477, 3478, 3479, 3480, 3481, 3482, 3483, 3484, 3485, 3486, 3487, 3488, 3489, 3490, 3491, 3492, 3493, 3494, 3495, 3496, 3497, 3498, 3499, 3500, 3501, 3502, 3503, 3504, 3505, 3506, 3507, 3508, 3509, 3510, 3511, 3512, 3513, 3514, 3515, 3516, 3517, 3518, 3519, 3520, 3521, 3522, 3523, 3524, 3525, 3526, 3527, 3528, 3529, 3530, 3531, 3532, 3533, 3534, 3535, 3536, 3537, 3538, 3539, 3540, 3541, 3542, 3543, 3544, 3545, 3546, 3547, 3548, 3549, 3550, 3551, 3552, 3553, 3554, 3555, 3556, 3557, 3558, 3559, 3560, 3561, 3562, 3563, 3564, 3565, 3566, 3567, 3568, 3569, 3570, 3571, 3572, 3573, 3574, 3575, 3576, 3577, 3578, 3579, 3580, 3581, 3582, 3583, 3584, 3585, 3586, 3587, 3588, 3589, 3590, 3591, 3592, 3593, 3594, 3595, 3596, 3597, 3598, 3599, 3600, 3601, 3602, 3603, 3604, 3605, 3606, 3607, 3608, 3609, 3610, 3611, 3612, 3613, 3614, 3615, 3616, 3617, 3618, 3619, 3620, 3621, 3622, 3623, 3624, 3625, 3626, 3627, 3628, 3629, 3630, 3631, 3632, 3633, 3634, 3635, 3636, 3637, 3638, 3639, 3640, 3641, 3642, 3643, 3644, 3645, 3646, 3647, 3648, 3649, 3650, 3651, 3652, 3653, 3654, 3655, 3656, 3657, 3658, 3659, 3660, 3661, 3662, 3663, 3664, 3665, 3666, 3667, 3668, 3669, 3670, 3671, 3672, 3673, 3674, 3675, 3676, 3677, 3678, 3679, 3680, 3681, 3682, 3683, 3684, 3685, 3686, 3687, 3688, 3689, 3690, 3691, 3692, 3693, 3694, 3695, 3696, 3697, 3698, 3699, 3700, 3701, 3702, 3703, 3704, 3705, 3706, 3707, 3708, 3709, 3710, 3711, 3712, 3713, 3714, 3715, 3716, 3717, 3718, 3719, 3720, 3721, 3722, 3723, 3724, 3725, 3726, 3727, 3728, 3729, 373

Table 2 C

| Sample<br>no. 1          | Observed<br>no. | Sediments and surface |       |      |       |        |       |        |       |      |       |        |       |         |         |
|--------------------------|-----------------|-----------------------|-------|------|-------|--------|-------|--------|-------|------|-------|--------|-------|---------|---------|
|                          |                 | Top                   |       |      |       |        |       | Bottom |       |      |       |        |       | Total   |         |
|                          |                 | Silt                  |       | Clay |       | Gravel |       | Silt   |       | Clay |       | Gravel |       | Silt    | Gravel  |
|                          |                 | 1-10                  | 10-20 | 1-10 | 10-20 | 1-10   | 10-20 | 1-10   | 10-20 | 1-10 | 10-20 | 1-10   | 10-20 |         |         |
| Unconsolidated<br>sample | 20              | Yes                   | No    | No   | No    | —      | —     | —      | —     | —    | —     | —      | —     | Gas     | Gas     |
|                          | 45              | —                     | Yes   | 1-1  | 10    | —      | —     | —      | —     | —    | —     | —      | —     | Gas     | Gas     |
|                          | 75              | —                     | Yes   | Yes  | Yes   | —      | —     | —      | —     | —    | —     | —      | —     | Gas     | Gas     |
| Lent                     | 54              | —                     | Yes   | Yes  | —     | Yes    | —     | —      | —     | —    | —     | —      | —     | —       | —       |
|                          | 58              | —                     | Yes   | Yes  | Yes   | Yes    | —     | —      | —     | —    | —     | —      | —     | —       | —       |
|                          | 74              | —                     | Yes   | Yes  | Yes   | Yes    | —     | —      | —     | —    | —     | —      | —     | Gas     | Gas     |
| Copper                   | 84              | —                     | Yes   | Yes  | Yes   | Yes    | —     | —      | —     | —    | —     | —      | —     | Gas     | —       |
|                          | 85              | —                     | —     | —    | Yes   | Yes    | —     | —      | —     | —    | —     | —      | —     | Gas + E | Gas     |
|                          | 95              | —                     | —     | —    | Yes   | Yes    | —     | —      | —     | —    | —     | —      | —     | —       | —       |
| Iron                     | 54              | —                     | Yes   | Yes  | Yes   | Yes    | —     | —      | —     | —    | —     | —      | —     | Gas     | Gas     |
|                          | 58              | —                     | Yes   | Yes  | Yes   | Yes    | —     | —      | —     | —    | —     | —      | —     | Gas     | Gas     |
|                          | 75              | —                     | Yes   | Yes  | —     | —      | —     | —      | —     | —    | —     | —      | —     | Gas + E | Gas     |
| Mang                     | 54              | —                     | Yes   | Yes  | Yes   | Yes    | —     | —      | —     | —    | —     | —      | —     | Gas + E | Gas + E |
|                          | 55              | —                     | Yes   | Yes  | Yes   | Yes    | —     | —      | —     | —    | —     | —      | —     | Gas     | Gas     |
|                          | 75              | —                     | Yes   | Yes  | —     | —      | —     | —      | —     | —    | —     | —      | —     | Gas     | Gas     |

(1) A = Acid

(2) A.G. = Acid and Gas

(3) Gas + E = Gas + Sediment

(4) S.A. = Slightly acid

(5) Log = Logarithmic

(6) M = Mang

(7) T = Unconsolidated

(8) V.S.A. = Very slightly acid

TABLE 1. - *Continued*

| Number<br>of<br>plants | Altitude<br>(ft) | Soil  |       |       |       | Leaves |       |       |       |       |       |       |       | Flowers and fruits |       |       |       |
|------------------------|------------------|-------|-------|-------|-------|--------|-------|-------|-------|-------|-------|-------|-------|--------------------|-------|-------|-------|
|                        |                  | Shade | Light | Shade | Light | Shade  | Light | Shade | Light | Shade | Light | Shade | Light | Shade              | Light | Shade | Light |
| 1                      | 21               | M     | M     | M     | M     | —      | A     | A     | A     | A     | A     | A     | A     | —                  | —     | —     | —     |
| 2                      | 25               | L     | L     | L     | L     | A      | A     | A     | A     | A     | A     | A     | A     | —                  | —     | —     | —     |
| 3                      | 31               | M     | M     | M     | M     | —      | —     | —     | A     | A     | A     | A     | A     | —                  | —     | —     | —     |
| 4                      | 35               | L     | L     | L     | L     | A      | A     | A     | A     | A     | A     | A     | A     | —                  | —     | —     | —     |
| 5                      | 39               | M     | M     | M     | M     | —      | —     | —     | A     | A     | A     | A     | A     | —                  | —     | —     | —     |
| 6                      | 43               | M     | M     | M     | M     | —      | —     | —     | A     | A     | A     | A     | A     | —                  | —     | —     | —     |
| 7                      | 47               | M     | M     | M     | M     | —      | —     | —     | A     | A     | A     | A     | A     | —                  | —     | —     | —     |
| 8                      | 51               | M     | M     | M     | M     | —      | —     | —     | A     | A     | A     | A     | A     | —                  | —     | —     | —     |
| 9                      | 55               | M     | M     | M     | M     | —      | —     | —     | A     | A     | A     | A     | A     | —                  | —     | —     | —     |
| 10                     | 59               | M     | M     | M     | M     | —      | —     | —     | A     | A     | A     | A     | A     | —                  | —     | —     | —     |
| 11                     | 63               | M     | M     | M     | M     | —      | —     | —     | A     | A     | A     | A     | A     | —                  | —     | —     | —     |
| 12                     | 67               | M     | M     | M     | M     | —      | —     | —     | A     | A     | A     | A     | A     | —                  | —     | —     | —     |
| 13                     | 71               | M     | M     | M     | M     | —      | —     | —     | A     | A     | A     | A     | A     | —                  | —     | —     | —     |
| 14                     | 75               | M     | M     | M     | M     | —      | —     | —     | A     | A     | A     | A     | A     | —                  | —     | —     | —     |
| 15                     | 79               | M     | M     | M     | M     | —      | —     | —     | A     | A     | A     | A     | A     | —                  | —     | —     | —     |
| 16                     | 83               | M     | M     | M     | M     | —      | —     | —     | A     | A     | A     | A     | A     | —                  | —     | —     | —     |
| 17                     | 87               | M     | M     | M     | M     | —      | —     | —     | A     | A     | A     | A     | A     | —                  | —     | —     | —     |
| 18                     | 91               | M     | M     | M     | M     | —      | —     | —     | A     | A     | A     | A     | A     | —                  | —     | —     | —     |
| 19                     | 95               | M     | M     | M     | M     | —      | —     | —     | A     | A     | A     | A     | A     | —                  | —     | —     | —     |
| 20                     | 99               | M     | M     | M     | M     | —      | —     | —     | A     | A     | A     | A     | A     | —                  | —     | —     | —     |

Shade = D, Light = L

|    |    |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|----|----|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1  | 21 | M | M | M | M | — | A | A | A | A | A | A | A | — | — | — | — |
| 2  | 25 | L | L | L | L | — | A | A | A | A | A | A | A | — | — | — | — |
| 3  | 31 | M | M | M | M | — | A | A | A | A | A | A | A | — | — | — | — |
| 4  | 35 | L | L | L | L | — | A | A | A | A | A | A | A | — | — | — | — |
| 5  | 39 | M | M | M | M | — | A | A | A | A | A | A | A | — | — | — | — |
| 6  | 43 | L | L | L | L | — | A | A | A | A | A | A | A | — | — | — | — |
| 7  | 47 | M | M | M | M | — | A | A | A | A | A | A | A | — | — | — | — |
| 8  | 51 | L | L | L | L | — | A | A | A | A | A | A | A | — | — | — | — |
| 9  | 55 | M | M | M | M | — | A | A | A | A | A | A | A | — | — | — | — |
| 10 | 59 | L | L | L | L | — | A | A | A | A | A | A | A | — | — | — | — |
| 11 | 63 | M | M | M | M | — | A | A | A | A | A | A | A | — | — | — | — |
| 12 | 67 | M | M | M | M | — | A | A | A | A | A | A | A | — | — | — | — |
| 13 | 71 | M | M | M | M | — | A | A | A | A | A | A | A | — | — | — | — |
| 14 | 75 | M | M | M | M | — | A | A | A | A | A | A | A | — | — | — | — |
| 15 | 79 | M | M | M | M | — | A | A | A | A | A | A | A | — | — | — | — |
| 16 | 83 | M | M | M | M | — | A | A | A | A | A | A | A | — | — | — | — |
| 17 | 87 | M | M | M | M | — | A | A | A | A | A | A | A | — | — | — | — |
| 18 | 91 | M | M | M | M | — | A | A | A | A | A | A | A | — | — | — | — |
| 19 | 95 | M | M | M | M | — | A | A | A | A | A | A | A | — | — | — | — |
| 20 | 99 | M | M | M | M | — | A | A | A | A | A | A | A | — | — | — | — |

(1) 1 - Leaf (2) 1 - Leaf (3) 1 - Leaf (4) 1 - Leaf (5) 1 - Leaf (6) 1 - Leaf (7) 1 - Leaf (8) 1 - Leaf (9) 1 - Leaf (10) 1 - Leaf (11) 1 - Leaf (12) 1 - Leaf (13) 1 - Leaf (14) 1 - Leaf (15) 1 - Leaf (16) 1 - Leaf (17) 1 - Leaf (18) 1 - Leaf (19) 1 - Leaf (20) 1 - Leaf

Series *Prothrombin* C repeated using a mixture of shallow well and rapid acting water.

Series *D* — 4 to 6 times *D* but only effect of copper determined, present to the extent of 0.001 part per 100,000.

Series *E* — 4 to 6 times *D* but only effect of copper determined, present to the extent of 0.01 part per 100,000.

STANDARD 1000 is given to the very marked effect copper had on malaria: the compounds may have as a bacteriological examination of water as to its fitness for drinking purposes.

The results further show that given the presence of some of these malarial mites in such minute quantities as were used on the stomach, the bacteriological examination of water could be somewhat more in cases of very serious malarial contamination and then any water which was unfit for drinking and contained these mites might be passed as bacteriologically of good quality. The results also serve to emphasize the importance of the chemical analysis of any sample of water. The problems of contamination of water are easily recognized by chemical means. It is chemically extremely difficult to isolate pathogenic organisms from water because there is a tendency for them to be submerged by the power of several of organisms normally present in water, and more especially in water containing sewage contamination. The only source from the bacteriological water examination of all water samples as employed at Royal Naval College, Greenwich, was that of the nature of the samples upon which under malarial conditions (Negative) for the presence or absence of *B. malarial* organisms (B. malarial).

Our thanks are due C.P.D. S.S. E. T. Young, D.S.M., R.N., for his aid in making and recording the tables, and also for re-examination.

#### WHITE MALARIA IN ADOLESCENTS

##### WHITE MALARIAL EPIDEMIC IN LADIES AT THE ROYAL NAVAL COLLEGE, GREENWICH

BY MAJOR DOUGLAS A. R. SIMBLE, R.N.

DEAR Sir, The war has passed a large stream of malarial infection of the islands of the R.N. College (Greenwich) in recent years, and has thus brought home an earnest and reasonable comment. The following message came in an attempt to find the probable causes of the trouble in order that satisfactory measures to reduce its prevalence might be taken. I have often in the past all cases of white malarial that have occurred in the last years 1910-1919. The collection is necessarily somewhat incomplete because many cases of our trouble were as complications of other diseases and were only shown in the returns under the original heading: also analysis of the cases was rendered very difficult by the paucity of notes in some cases. I have



however collected 361 cases of acute scabies appearing under the heading of Disease of Skin, and also forty-one additional cases from reports of various well-known physicians of these latter were complementary of scabies, and consequently require no reference. I think these figures represent fairly accurately the total number of cases during this period. The total cases of our disease are equivalent to 5.67 per cent. of the total work up in this period, and average nine days' treatment per case.

Disease Notes in Appendices.

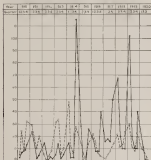


Fig. 1. (a) Total number of cases of scabies; (b) number of cases of scabies treated in the hospital; (c) number of cases of scabies treated in the out-patient department.

Number of cases of scabies treated in the hospital.

The unshaded area is shown in percentage, and the area in number per 1,000. It is noteworthy to observe the tendency of the curve in both cases.

Investigation of the primary cause reveals:—

From cases of cystic media due to metastasis from a carcinoma. In 1 case metastasis to one of the horns. One case of cystic media of testicular origin, 181 more not stated.

The 301 cases which are mentioned as in common cases in which metastasis was the first symptom complained of and I can find from the notes no history of recent catarrh or the existence of any predisposing cause. I think it probable that most of these cases followed an untreated cold and such an infection might be drawn from the accompanying chart which shows the relative incidence of catarrh and carcinoma during the ten years.

From examination of the testis and lungs my own experience, based catarrh is the commonest cause of cystic media. The common 'cold' is usually the starting cause but the extension of inflammation into the Kocherian tubes and the subsequent infection of the middle ear only comes when there is either an unhealthy condition of the nose and throat, or when the patient has been undergoing 'tubing' in the 'cystic' method of nose-tubing.

There is also an epidemic catarrh, a highly infectious cold, which not infrequently appears amongst communities such as ships, and it is probable cause of cystic media: this disease has been variously named, the term "infectious cold" being sometimes applied to it, but the name is not leading as I think the disease distinct from influenza. During the epidemic years, 1911 there was an epidemic of this infectious catarrh. 353 cases occurred of which 55 developed cystic media, and all these cases went on to perforation and suppuration. Bacteriological examination of the throat showed the presence of the common pyogenic organisms only. Hypertrophied tonsils and enlarged adenoids particularly the latter are frequently associated with cystic media.

During the epidemic years, 1916, it was noted that of the twenty-one cases of cystic media under treatment, underlying tonsils or adenoids existed in every case in twenty-nine both conditions were present. Another predisposing factor is pressure on the middle ear it is surprising to note the number of sailors who, on admission to the ear, lay with catarrh, give a history of pressure on the middle ear whilst at sea or at home. Unfortunately owing to lack of statistics, no statistics can be given of the total number who had been previously affected, but the following figures are interesting:—

During the epidemic years 1917 there were eighteen cases of cystic media of which seventeen gave a previous history of ear trouble.

During the epidemic years, 1918, eleven out of twelve cases of cystic media had had one or more previous attacks.

PREVENTIVE TREATMENT.—Preventive treatment should be directed against the two main causes of cystic media namely (1) post nasal catarrh (2) the infectious fever. The former is the more important as it provides the majority of our cases and also holds out brighter prospects of success.

The treatment I suggest may be classified under three main headings: (1) Preventative clothing rules; (2) Sanitary treatment of the skin; (3) Treatment in actual conditions of the throat and respiratory tract.

(1) Special directions of and treatment in relation selected with in the history of the skin.

(2) All necessary rules of clothing and should be made suitable clothing should be worn according to weather conditions, and the clothes to be worn and. Proper hygiene conditions of actual clothing should be maintained, particularly with regard to washing, ventilation and the avoidance of overexposure. Importance of habits in their power, this is especially important in cold weather. This should be taken to prevent them being about in their thin clothes before and after exercise.

Importance of bathing in connection with our plunge bath. Colds should not stay in the water long and should be wiped to dry quickly after bathing.

Note—The plunge bath here and swimming bath at other establishments have been suggested as a real cause of colds, but I think this is only indirectly so, if the bathing is not regulated it may become a fruitful cause of catching cold and indirectly causing acute colds, infection of the middle ear secondary to colds which has never been observed at College.

(3) Colds should be encouraged to report themselves at the neck by the first signs of cold in the head. These, they are indicated in the common manner in which they should show themselves, i.e. on holding only the cold heavy portion of the nose and as not many cures have during the act of blowing. The danger of compressing the nasopharyngeal area and blowing forcibly would be explained here it creates a great internal pressure followed by a temporary partial rupture in the mucous membrane, thus increasing the area of mucous membrane affected and also enlarging the mucous membrane themselves.

Colds suffering from catarrh should attend the neck by three times daily for medicine and should have their temperatures taken morning and evening of the temperature rise to 101° F. or above they should be admitted to the neck lot and put to bed. Colds must be treated in regard the plunge bath and games to avoid contracting their present condition and also advising others. Medicine is a matter for the individual physician at College we use the following medicine which is agreeable to take and I think beneficial—

|   |                    |     |
|---|--------------------|-----|
| R | Throat medicine as | 500 |
|   | For colds          | 500 |
|   | Hygiene            | 500 |
|   | Asper stirred      | 500 |

(4) Both throat and tonsils must be always treated in the neck by in separate. Chronic catarrh of the nasopharynx, is very common particularly at the beginning of the term, many cures having treatment

calls on, have, which these parents and themselves have created and are subject to, conditions that require medical care for the condition which influenced them and for the greatly nothing in particular can be found to account for the individual's condition. At these cases again, the danger of "explaining" something, as pointed out, the treatment should be the same as that in dealing with the fetus, the procedure is similar: only, treatment is not done while the level of infection and work, the left part of a Tag, may through the other depends, the parent's tongue and hands the pet of the tooth and post played, and until the end of the end of the month upon a complete hold by the parent. The advantage of the kind of treatment is that the mother is removed from the fetus and the mother is not that the pet of the mother, these parts which are on the mother's side. The solution used contains sugar which helps the fetus to live in a quiet state. It should be used before the fetus is 1. It is not necessary to give it to the mother and then feeding is high in calories for the necessary reason. After the first application parents find the method of drinking from the parent, and if necessary, it is very effective.

The condition of the mother and herself of all who have under treatment for dental should be carefully noticed. A lot being made of all cases of enlarged teeth, already galls, or other medical conditions, the parents condition is, if any of the contents of such a condition is, under that it might be removed by operation during the next time, and then used for a second time.

(4) I would suggest that a question be added to my history of the case or other is a table to the other questions on L. 9. Statement of Medical Examination for Dental on L. 9. History of the condition should not delay a condition for treatment or for medical examination, provided that the condition has entirely resolved and then no subsequent factor such as already exists. When a condition otherwise exists, but some medical condition, the parents should be instructed to have the condition by operation before the beginning of the term, then usually about one week before the examination and the measurement of the term in which this could be done.

(5) PREVENTION OF THE COMPLICATIONS OF DENTAL DYSPLASIA—When again, after a mother is found to have a dental condition of the fetus, it is a common complication, however, after, there is a permanent feature in an epidemic. Early recognition and treatment of these conditions are essential.

A list of these conditions, as previously described, should be applied to the mother and the patient must be taught to follow from experience. How long

#### STRUCTURE AND PHYSICAL STATE

Long dental stages of the disease may be recognized. Conditions may vary from the conclusion of any one stage of the disease advance to the next.

**Stage 1.**—*Medication to which case is immediately brought.*—In the latter instance, a moderate, slow reduction in blood-pressure is indicated. After doing this, some further abdominal palpation is necessary. In some instances the results of the second palpation of the abdomen (supra) are seen to be repeated. There is usually little possibility of hearing from the attack, and all hearing returns soon after the attack is checked. Some time out of the 200 is needed for this part of the treatment.

**Stage 2.**—*Stage of perforation.*—When the inflammation advances towards perforation, the case loses its compressible, general vascular appearance and takes, judging perforation exists, a form often accompanied by a severe discharge. Frequently violent cramps occur, and a few hours of perforation the pain deepens, the pulse rapidly diminishes and heaving of the membrane takes place within three or four days. The hearing quickly returns and in a month or so patients are well.

**Stage 3.**—*Stage of suppuration.*—In this stage the discharge is more profuse and is purulent, taking a much longer time to clear up than in the first week to several months. The case, made up of cases having the slightest fever, were mostly of this nature. After a time some slight diminution of hearing always occurs, or the intensity of cramps is not sufficient to affect the patient's efficiency, or a neural effect.

**Stage 4.**—*Stage of suppuration.*—The inflammation spreads from the middle ear mainly backwards, involved structures. In this stage of cases, one case of perforation of the ear, and eleven cases of marked abscess are recorded. Two of the marked cases were complicated by meningitis and instrumental help, the other cases made good recoveries after operations.

#### TREATMENT

The treatment varies according to the stage of the disease.

**Stage 1.**—I would include below a few cases, not the internal ear and then lightly pack the canal with gauze soaked out in the lotion. My experience I feel certain below has a greater effect in relieving the pain than either cocaine or eugenol (used locally) or less also the great advantage of relieving the external auditory canal disease and does not cause deafness to the same extent as cocaine solution. No other treatment is necessary but these cases are kept under observation for a month after they return to duty.

**Stage 2.**—When perforation appears inevitable I do not recommend perforation as a routine treatment, the advantages of quickly relieving the pain and saving time are not commensurate with the necessity for an anesthetic and the danger of the operation or, say, for the same reason, handle a hypodermic injection of morphine. <sup>1</sup> to 4 gr. usually takes care the short interval before perforation. When perforation has occurred, the suppurative fluid is removed up three daily and the external auditory canal lightly packed with eucalypti gauze. When the perforation has healed there is usually no need for after-treatment, but if the return of hearing is

delayed, Polyspermatia may be resorted to, even being taken to the point the edema of the meninges has entirely subsided. However, this has had favorable results and is not permitted to be taken or not the phage body, but at least a month after these results in data, experience has taught us that the presence of water may cause pain in a severely affected ear.

Stage 3—It is important to keep the external auditory meatus clean of discharge in order to prevent irritation of the walls of the canal, and to encourage drainage from the middle ear. Frequent irrigation of the canal with a cold alkaline lotion is desirable the lotion being introduced from a small syringe or by means of a rubber catheter. By means of the double ear 12 or 14 in. is introduced. This is obtained. After irrigation the canal is dried with cotton wool and the meatus lightly packed. During the later stages a few drops of hydrogen peroxide may be inserted before irrigation.

Polyspermatia is often necessary to assist the return of hearing, but should never be performed while post nasal catarrh persists. Fever and tenderness over the mastoid process frequently occur during the acute stage, but as a rule clear up as the acute stage passes off. I am convinced that an early period of operation in these cases is best treatment, the results of first operations are almost uniformly good.

Stage 4—When there is increasing proof that infection has spread beyond the limits of the middle ear, surgical intervention is required to obtain the necessary drainage.

#### CONCLUSIONS

In concluding I should like to emphasize the three following points, placing them in their order of importance with regard to this matter in general:

(1) The avoidance of all causes of entry being healthy as to throat and nasopharynx. This would render mastoiditis possible would make them less liable to contract catarrh and throat conditions, and that relatively safe from the danger of ear trouble.

(2) The importance of detecting those coming from cold and upper catarrh of the throat in the correct manner in which they should receive their usual treatment, and in return have visiting a high general physician which extends infection and prolongs the disease.

(3) The advantage of mastoid drainage over all other surgery, in the best form in (brought into action) contact with the affected parts and the discharge of the, in any way without any voluntary effort on the part of the patient.

For the past three months, as far as possible I have carried out my plan previously stated and am well satisfied with the results obtained, though admittedly this period is too short to draw definite conclusions, yet I feel confident that given healthy subjects to start with, early recognition and efficient treatment of mastoiditis as they arise, with middle ear trouble a comparatively rare disease amongst adults.

## ON REAL ECONOMY IN RECEIVING

OF HUMAN INTELLECT AND A F. GRUBBS, M. A. AND L. GRUBBS, M. A.

Our approach in writing this paper is in part set and by a number of circumstances. We are on the economic side of neurological examination in connection with the Navy. It must be evident to all who have been in charge of the (though I do not say) that members of men have entered the service in the recent past who are wholly incapacitated by means of mental defect in the mechanism of the central nervous system. Moreover, such incompetently treated individuals continue to pass at the present time. In these days of post-war poverty we are urged on every quarter to economize in expenditure but it would appear that not a thought has been given to the enormous expense in the State of allowing epileptic mentally deficient and hereditarily tainted subjects to pass the Navy.

Effect on the extent of neurological investigation of the character of epilepsy for the Service? Little more than a request to sign a statement to the effect of the condition never having suffered from 'fit'. The unfortunate epileptic is not likely to detect his answer at the outset by making such declaration. He waits, maybe for an exciting word he is notified by a few of his literary associates during a rapid seizure, is sent to hospital and ultimately notified a dead financial loss to the country.

I have collected a few instances of unsuitable individuals who have been accepted from the Royal Naval Hospital, Chatham, during the year 1933 and give a picture of such cases under suitable group headings.

## (a) Cases with a Family History of Epilepsy, etc.

## (1) F. B. aged 33, status Epilepticus. No sea service.

Herman. Subject to epileptic attacks at frequent intervals during the last four years. Mother an epileptic. Record of some attacks in the Service in two months.

Character. Patient was a typical epileptic. Had a general seizure in hospital. Herman lost in three months. Area of headache and giddiness. People distant and sluggish in reaction to light. Sleep restless almost.

## (2) A. D. aged 35, G. B. Epilepsy. Three years sea service.

Herman. Several seizures during entry. Fit in hospital. Family history of epilepsy and mental deficiency.

Character. Patient presented the physical signs of an epileptic. People distant, sluggish and sluggish in light. Sleep restless almost. Had a typical seizure in hospital of two minutes duration.

## (3) G. B. aged 32, A. B. Mental deficiency. Served for two years in a regular ship.

Herman. Display a general paralysis. Intellectual deficiency. Served as he worked at his work.

Character. Complained of a subjective feeling over in his head. Deficient in mind and speech. Entered few of ideas. Eyes quite weak, exaggerated bright and epileptic.





Medians (bars) and 95% CIs are shown. \*  $P < 0.05$  (Mann-Whitney  $U$ -test).

*Carassius*: One large and slender. Subject to frequent periods of anorexia. Will be feeding its stomach all year (laying the eggs). Deep in brown, greenish, and light, translucent on light.

1994, 1995, 1996, 1997, 1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024, 2025, 2026, 2027, 2028, 2029, 2030, 2031, 2032, 2033, 2034, 2035, 2036, 2037, 2038, 2039, 2040, 2041, 2042, 2043, 2044, 2045, 2046, 2047, 2048, 2049, 2050, 2051, 2052, 2053, 2054, 2055, 2056, 2057, 2058, 2059, 2060, 2061, 2062, 2063, 2064, 2065, 2066, 2067, 2068, 2069, 2070, 2071, 2072, 2073, 2074, 2075, 2076, 2077, 2078, 2079, 2080, 2081, 2082, 2083, 2084, 2085, 2086, 2087, 2088, 2089, 2090, 2091, 2092, 2093, 2094, 2095, 2096, 2097, 2098, 2099, 2100, 2101, 2102, 2103, 2104, 2105, 2106, 2107, 2108, 2109, 2110, 2111, 2112, 2113, 2114, 2115, 2116, 2117, 2118, 2119, 2120, 2121, 2122, 2123, 2124, 2125, 2126, 2127, 2128, 2129, 2130, 2131, 2132, 2133, 2134, 2135, 2136, 2137, 2138, 2139, 2140, 2141, 2142, 2143, 2144, 2145, 2146, 2147, 2148, 2149, 2150, 2151, 2152, 2153, 2154, 2155, 2156, 2157, 2158, 2159, 2160, 2161, 2162, 2163, 2164, 2165, 2166, 2167, 2168, 2169, 2170, 2171, 2172, 2173, 2174, 2175, 2176, 2177, 2178, 2179, 2180, 2181, 2182, 2183, 2184, 2185, 2186, 2187, 2188, 2189, 2190, 2191, 2192, 2193, 2194, 2195, 2196, 2197, 2198, 2199, 2200, 2201, 2202, 2203, 2204, 2205, 2206, 2207, 2208, 2209, 2210, 2211, 2212, 2213, 2214, 2215, 2216, 2217, 2218, 2219, 2220, 2221, 2222, 2223, 2224, 2225, 2226, 2227, 2228, 2229, 2230, 2231, 2232, 2233, 2234, 2235, 2236, 2237, 2238, 2239, 2240, 2241, 2242, 2243, 2244, 2245, 2246, 2247, 2248, 2249, 2250, 2251, 2252, 2253, 2254, 2255, 2256, 2257, 2258, 2259, 2260, 2261, 2262, 2263, 2264, 2265, 2266, 2267, 2268, 2269, 2270, 2271, 2272, 2273, 2274, 2275, 2276, 2277, 2278, 2279, 2280, 2281, 2282, 2283, 2284, 2285, 2286, 2287, 2288, 2289, 2290, 2291, 2292, 2293, 2294, 2295, 2296, 2297, 2298, 2299, 2300, 2301, 2302, 2303, 2304, 2305, 2306, 2307, 2308, 2309, 2310, 2311, 2312, 2313, 2314, 2315, 2316, 2317, 2318, 2319, 2320, 2321, 2322, 2323, 2324, 2325, 2326, 2327, 2328, 2329, 2330, 2331, 2332, 2333, 2334, 2335, 2336, 2337, 2338, 2339, 2340, 2341, 2342, 2343, 2344, 2345, 2346, 2347, 2348, 2349, 2350, 2351, 2352, 2353, 2354, 2355, 2356, 2357, 2358, 2359, 2360, 2361, 2362, 2363, 2364, 2365, 2366, 2367, 2368, 2369, 2370, 2371, 2372, 2373, 2374, 2375, 2376, 2377, 2378, 2379, 2380, 2381, 2382, 2383, 2384, 2385, 2386, 2387, 2388, 2389, 2390, 2391, 2392, 2393, 2394, 2395, 2396, 2397, 2398, 2399, 2400, 2401, 2402, 2403, 2404, 2405, 2406, 2407, 2408, 2409, 2410, 2411, 2412, 2413, 2414, 2415, 2416, 2417, 2418, 2419, 2420, 2421, 2422, 2423, 2424, 2425, 2426, 2427, 2428, 2429, 2430, 2431, 2432, 2433, 2434, 2435, 2436, 2437, 2438, 2439, 2440, 2441, 2442, 2443, 2444, 2445, 2446, 2447, 2448, 2449, 2450, 2451, 2452, 2453, 2454, 2455, 2456, 2457, 2458, 2459, 2460, 2461, 2462, 2463, 2464, 2465, 2466, 2467, 2468, 2469, 2470, 2471, 2472, 2473, 2474, 2475, 2476, 2477, 2478, 2479, 2480, 2481, 2482, 2483, 2484, 2485, 2486, 2487, 2488, 2489, 2490, 2491, 2492, 2493, 2494, 2495, 2496, 2497, 2498, 2499, 2500, 2501, 2502, 2503, 2504, 2505, 2506, 2507, 2508, 2509, 2510, 2511, 2512, 2513, 2514, 2515, 2516, 2517, 2518, 2519, 2520, 2521, 2522, 2523, 2524, 2525, 2526, 2527, 2528, 2529, 2530, 2531, 2532, 2533, 2534, 2535, 2536, 2537, 2538, 2539, 2540, 2541, 2542, 2543, 2544, 2545, 2546, 2547, 2548, 2549, 2550, 2551, 2552, 2553, 2554, 2555, 2556, 2557, 2558, 2559, 2560, 2561, 2562, 2563, 2564, 2565, 2566, 2567, 2568, 2569, 2570, 2571, 2572, 2573, 2574, 2575, 2576, 2577, 2578, 2579, 2580, 2581, 2582, 2583, 2584, 2585, 2586, 2587, 2588, 2589, 2590, 2591, 2592, 2593, 2594, 2595, 2596, 2597, 2598, 2599, 2600, 2601, 2602, 2603, 2604, 2605, 2606, 2607, 2608, 2609, 2610, 2611, 2612, 2613, 2614, 2615, 2616, 2617, 2618, 2619, 2620, 2621, 2622, 2623, 2624, 2625, 2626, 2627, 2628, 2629, 2630, 2631, 2632, 2633, 2634, 2635, 2636, 2637, 2638, 2639, 2640, 2641, 2642, 2643, 2644, 2645, 2646, 2647, 2648, 2649, 2650, 2651, 2652, 2653, 2654, 2655, 2656, 2657, 2658, 2659, 2660, 2661, 2662, 2663, 2664, 2665, 2666, 2667, 2668, 2669, 2670, 2671, 2672, 2673, 2674, 2675, 26

1. The first step in the process is to identify the problem or issue that needs to be addressed. This involves gathering information and understanding the context of the problem.

**Concepts:** a number name and comparison individual (any age) or both in person and before linguistic theory. Includes or excludes. Defined through the sample.

doi:10.1002/for.1004 Published online 2005 in Wiley InterScience (www.interscience.wiley.com).

[1] M. D., aged 22, states: "I had delirium. It was very bad. My mind

**Abstract** All completed, ongoing, and possible

Geography: A very mobile, nervous mechanism which reacted abnormally to any-thing by alcohol. The attempt to murder had been motivated as a diversion planned by alcohol that in numerous previous, he had no modification of crime following drinking bouts. He denied all knowledge of his officers. He was not easily to be deceived.

[illegible]

Information for observations not covered in previous studies

|                    |  |                  |
|--------------------|--|------------------|
| <b>Concomitant</b> | Presented as conjunctiva and eyelids, developed symptoms. He became disoriented and hospitalized for three days. | Anterior uveitis |
| <b>Diagnosis</b>   | Diagnosis of acute Anterior uveitis/iritis of both eyes.   | Thyroiditis      |
| <b>Management</b>  | Discontinuation of all medications, eye drops.   |                  |

(b) (4). aged 18 years. Mental disability. Has no legal guardian.

**Keywords:** *Chronic pain, coping, self-efficacy, social support, depression*

**Characteristics:** Small, cool apartment. 4 rooms and a balcony. On 4/20/2012, the 4 bedrooms are furnished. Chopped but kind, the joy in entering the mental on a 4/20 rule, such 1 like entered, on the morning. Found to be a modern place with a balcony.

| Cell | Co. 12—wood 18 | cellular | Wooded | cellular | cellular |
|------|----------------|----------|--------|----------|----------|
| 1    | 12             | 18       | 18     | 18       | 18       |
| 2    | 12             | 18       | 18     | 18       | 18       |
| 3    | 12             | 18       | 18     | 18       | 18       |
| 4    | 12             | 18       | 18     | 18       | 18       |
| 5    | 12             | 18       | 18     | 18       | 18       |
| 6    | 12             | 18       | 18     | 18       | 18       |
| 7    | 12             | 18       | 18     | 18       | 18       |
| 8    | 12             | 18       | 18     | 18       | 18       |
| 9    | 12             | 18       | 18     | 18       | 18       |
| 10   | 12             | 18       | 18     | 18       | 18       |
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doi:10.1017/S0022292412001509 Printed in the United Kingdom

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**PROVERBS.** Belated improvement of a well-worn proverb is that which is [found] by the discovery of all derivations and sources that have and have not, [contributed] to its origin, [improved] and subject to variations. History is but a story for every age, influenced by assumptions of mental evolution. *—Merrill, The American People*. [Compiled frequently of proverbial language. — *Encyclopedia* (1911), 10:104.

Feb 1 Case removed from list from the Bureau of Prisons

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11a. 1992. *Identified Great Honey Bee (Apis mellifera) colonies in California*. 21 pp.

Chlorine is a green, poisonous gas, heavier than air, and is used in the manufacture of many chemicals. It is also used in the treatment of drinking water.

(King of Augustus' account), on the grounds of the lack of all of the New Testament

of economy that candidates for entry be screened by export or de-

of the nervous system. The value of many schemes for the improvement of national health is measured by the expense which the adoption of such schemes would entail but to the suggestion outlined in these pages there can be no such objection, for the relatively small cost of establishing neurological centers at the *Admiralty* and naval institutions would be overbalanced by the reduction of financial loss following systematic rejection of the unfit. Careful mental investigation of nervous weaknesses and inquiry into family histories would dispense with the enormous pecunie cost created by the arrival of disability pensions in the unwieldy deluged unfortunate entitled to play their part in the struggle of life by means of some structural flaw, in whom speedy nervous disintegration has been induced by hereditary conditions.

Systematic neurological examinations of all candidates for the Service constitutes the basis of true economy and its adoption as a routine measure would result in a rapid and permanent improvement in naval health.

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## Naval Medical History of the War

### GENERAL SECTION

Illustrated by Henry Ross, Surgeon, U. S. Navy, and Surgeon, U. S. Army.

#### PART I—IMMEDIATE SURGERY IN FIGHTING SHIPS

- A. *General* (a) In Fighting Ships. By Surgeon Lieutenant-Commander H. L. Houghton. 200 pp. 10 in. P. 1008. 2-PIC. N.Y.  
(b) On Hospital Ships. By Surgeon Captain F. J. A. Mahan. 170 pp. 10 in. P. 1009. 2-PIC. N.Y.  
(c) On Hospital Vessels and Small Craft. By Surgeon-Commander A. H. Peck. 100 pp.  
B. *On Board* (a) With the Great Naval Fleets. By Surgeon Surgeon-Lieutenant J. W. Houghton. 100 pp. 10 in. P. 1010. 2-PIC. N.Y.  
(b) With the Naval Forces within American Waters. By Surgeon-Lieutenant H. L. Houghton. 100 pp. 10 in. P. 1011. 2-PIC. N.Y.  
(c) With the Naval Forces at Sea. By Surgeon-Commander J. W. Houghton. 100 pp. 10 in. P. 1012. 2-PIC. N.Y.

#### IMMEDIATE SURGERY IN FIGHTING SHIPS

In Surgeon Lieutenant-Commander H. L. Houghton's, 100 pp. 10 in. P. 1008. 2-PIC. N.Y.

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General considerations. Types of ships—transit ships, etc. (Mahan, Part III). Primary considerations—Outline of the work of the ship's surgeon, etc. (Houghton, Part I, and Mahan, Part II). Secondary considerations—Outline of the work of the ship's surgeon, etc. (Houghton, Part I, and Mahan, Part II). Tertiary considerations—Outline of the work of the ship's surgeon, etc. (Houghton, Part I, and Mahan, Part II). Quaternary considerations—Outline of the work of the ship's surgeon, etc. (Houghton, Part I, and Mahan, Part II). Quinary considerations—Outline of the work of the ship's surgeon, etc. (Houghton, Part I, and Mahan, Part II). Quinary considerations—Outline of the work of the ship's surgeon, etc. (Houghton, Part I, and Mahan, Part II).

### GENERAL CONSIDERATIONS

The Institute of Surgery at a fighting ship at sea during the hours of peace rather to provide operative measures being undertaken, even in cases of extreme urgency. War conditions necessitate these functions, yet at the same time the early treatment of selected wounds necessitates the practical application of surgical principles as far as the exigencies of the battle permit. Consequently the following pages will be confined to a description of the work which a naval medical officer may expect after action at sea. These observations are founded on the experience of those who have passed through the ordeal of battle and have recorded their results. Each important problem in the medical organization for action

The text of this article is based on an article by Henry Ross, Surgeon, U. S. Navy, in a Fighting Ship, by Henry Ross, Surgeon, U. S. Navy, 100 pp. 10 in. P. 1008. 2-PIC. N.Y. The text of this article is based on an article by Henry Ross, Surgeon, U. S. Navy, in a Fighting Ship, by Henry Ross, Surgeon, U. S. Navy, 100 pp. 10 in. P. 1008. 2-PIC. N.Y. The text of this article is based on an article by Henry Ross, Surgeon, U. S. Navy, in a Fighting Ship, by Henry Ross, Surgeon, U. S. Navy, 100 pp. 10 in. P. 1008. 2-PIC. N.Y.

the personnel of the first aid detachment, stations and the medical parties, as well as the presence and stowage of the surgical equipment and medical supplies, in respect, the stowage of the chapters and will be fully discussed elsewhere.

It is not infrequently stated that little more than first aid should be attempted, some indeed believe that the role of gun represents the high water mark of the surgeon's activity. Such is evident on the present notion for a surgeon being on a fighting ship at all offers but a poor prospect for the wounded and these ideas may be discarded at the outset as being too restrictive. On the other hand, the difficulties which confront a surgeon cannot be exaggerated especially in the smaller ships. The conditions under which he is forced to operate must always remain the very antithesis of those which prevail ashore, even well equipped hospitals. Nevertheless it will be gathered from this brief account that a vast amount of emergency surgery has been carried out successfully in almost every class of fighting ship and that the ultimate progress of wounds and fractures depends very largely on the early treatment which they have received.

*Types of Ship*—Battleships and battle cruisers naturally offer the most facilities for operative work, the light cruiser—a destroyer offers none, and the following observations apply principally to the larger ships in which it is assumed that two surgeons are available.

#### HYGIENICALLY APPLICABLE

During the normal period a heavy strain is imposed on the medical organization of any ship which has sustained heavy casualties. On going ashore from the debarking station to the scene of disaster, the surgeon will do well to recall to his mind his first duty, viz., to render the ship as efficient fighting unit as he retains his power. An explosion either on the upper deck or between deck creates utter disorder. The dead, dying and wounded may be trodden on a trample or scattered in every conceivable place over the decks and considering debris, and, and the means of the wounded are killed and the surroundings shocked when cannot be restored. These must severely but receive attention first but to prevent them is little more to pick and choose. Morphine is administered as I do doses preferably by the hypodermic method and a label indicating the dosage and the time is fixed to the clothing. The hemorrhage is controlled by pressure, a tourniquet or the application of a Spencer Wells, the legs as the common demands. The effect of the morphine is once more the antiseptic, delirious pain is relieved and thus the mental discipline is able to be established.

The dead and wounded are now sorted out and separated from the mass of wreckage in which they lie so that they may be placed under shelter as near as possible where they lie. Passages and afterwards are kept clear so that no impediment hinders the work of those who are left to carry on. In light cruisers where the majority of casualties occur

in all eyes dark (blackish) and somewhat brown (1) parts of green (grey) and red (brown). An attempt to shut itself as the extent of darkness during the movement was of little effect, although the eyes dark (1) less the tendency to keep the same level as the upper part, affords the most suitable and secure observation position.

The subject not limited rate the situation somewhat increasing the degree of relaxation (1) and using the appearance of the face and the shape, varying the movement accordingly that with relative increase in possible also the upper lip position provides for although the mouth is already infected the person's facial expression here, not obtained a foothold in the face. A tendency to look with upturned jaw as a look with gaze, and serves a reliable support in protecting the forehead area from additional pressure. As a reference can be placed on these findings for reading, the reading situation must, which must never fail to secure illumination, as far as possible, but that is obviously difficult and with large waste of energy.

Reading—(2) Experiment: in nature during the event was here, obtained the view that no other vehicle in the subject's appearance is, so far as possible in this form. The lip position, which caused out by nature, is widely enough in a study thing to maintain it. Rigidity of action and accuracy of shape, as should occur. Visible placed marks the change in distance given by the mouth, infected upon the work situation. The subject (with depth) upon the effect produced in the situation is liable to determine no exposure to light and warmth. Half a gram as the initial dose (grey) and very small. As a whole have continued some, required a few minutes previously, it is full doses advantage and therefore the drug should be administered fully. As the range, capacity at 20 m—the large quantity (1) a single injection—the strength of the solution can conveniently be made up to 1 g in 20 m. A similar pattern of needle appears desirable since the eye has, not given in a state of pain and frequently, under different given conditions of light.

First day—(3) Under the same, and above reported in reading, the principle of first and in the shape's appearance is justified by the results. It used as positive in a matter open to discussion. The second effect is no doubt excellent but on the other hand the average area does not take easily to handling words. Both Møller [1] and Møller [2] point out very definitely that no reference can be placed upon the work as a whole for this work. The subject are involved—and not without reason—in the sight of their modified appearance. Consequently they should have reading, blind and severely work and from the second day.

Nevertheless it must be denied that a motion properties e.g. (1) (2) out of the complexity might to reserve a thorough and gradual course of instruction. Would there might obtain the opportunity of becoming accustomed to the sight of blind and suffering their efficiency for emergency work as increased a hundredfold. As a general rule, the index

make an excellent cover so that he will stand in the shade of his wounded mates with the utmost solace, and in this way he becomes automatically a valuable asset to the medical staff in the carrying of out duties after the action is over. The first-aid boxes stand prominently when the members of the first-aid parties have been themselves depleted by casualties, as is not infrequently the case.

The training of officers in this subject might be carried a step further with advantage to all. First aid is largely a matter of common sense. When in a peace time service it is the executive officer who sees the needful happen and can apply the principles of first aid immediately. War conditions have proved conclusively, in my opinion, that a practical course of first aid should be included in the curriculum of every naval officer.

*Primary Hemorrhage.*—Owing to the high temperature of the shell fragments this age has been less than we anticipated. In the large shell wounds the tissues are seared and torn and consequently more solid than blood probably. This point will be dwelt upon more fully in a subsequent paragraph. Shrapnel [?] refers to the great difficulty which is experienced in controlling this type of bleeding in a destroyer which was within the radius of action. In some instances primary hemorrhage was terrible. Men lay in a pool of their own blood before succor could be rendered. No other single factor adds so much ghastly realism to the picture between decks as this. Men taken down, log-rollers and duty boxes are splashed with blood while even the fire water running from side to side with the roll of the ship is coloured with a dark brown stain.

#### COMMENCEMENT OF FIRST AID

When the captain leaves the ship outside the range of further action and the wounds have been attended, the activities of the surgeon will extend upon a second stage in the practice of emergency surgery. The importance of close co-operation between the captain and the senior medical officer both before, during and after action cannot be too strongly emphasized. Information with regard to the commencement of action, the occurrence of a "kill," the possible trend of events and a forecast of the weather conditions facilitate the medical organization tremendously. For instance, the amount of immediate surgery to be undertaken will depend on such questions as the number of hours or days which elapse before the ship can transfer the wounded to a hospital ship, a base or a sea port, the state of the ship herself and the probability of a second engagement. The narrow confines of the North Sea, combined the ground of wounded men being dropped in an average of forty hours, provided the normal speed of the ship was not diminished, but if we take the case of the fleet between H.M.S. Sydney and the *Arcturion* several days elapsed before relief could be obtained.

*Support Tents.*—Emergency surgery does not call for an abundance of

and lamps, and those supplied to lighting ships. *Ships of 1919* will make experiments. At the same time it seems probable to solve it is to a few practical suggestions which are offered to improve the efficiency of the operating technique and indirectly the comfort of the patient.

The standing position, the knee-knife or "honey" band in the gully, sets an admirable substitute for the usual type. Marked open lamps and electrical heaters are not infrequently produced unnecessary during an attack. With regard to the operating table itself, Colson (1) has already noted the value of providing it with rubber feet so that it may be moved to any desired position—a practical point of the greatest importance.

To overcome the difficulty of providing for each surgeon his favorite needle, the Dr. Thomas's pattern with slotted eyes is simple, easily retained and affords the rapid work. No time is lost in threading and it is very easy to handle. The novel arrangement devised by Sir George Leonard Christie works a distinct improvement on the substitution one of Foster for use in a ship. It itself advantages lie in the ease of application and the economy with which it can be adjusted to control hemorrhage effectively by tying the ligament when desired. The mechanism itself consists of a chain and moving hook controlled by an operating screw with a hand-wheel. The bridge is applied over the point of deep incision. A towel should separate the apparatus from the skin, and the whole can be removed by hooking.

When under the microscope each patient undergoes a systematic examination. View (F) has drawn attention to the importance of this procedure, as regards to the eyes, ribs, back and footlock are liable to be overlooked. Such unexpected lesions are noted at the time, as they are designed in the hospital ship a serious and complete description occurs upon each case. In carrying out this investigation the utmost gentleness is exercised in manipulating the exposed parts of the degree of shock is to be estimated.

#### CHARACTER OF NAVAL WOUNDS AND THEIR TREATMENT

*Generalities*—These are more commonly produced by the men being thrown against a bulkhead in one of the internal berths or the ship by the force of the explosion. Others are caused by the falling of part of the superstructure. They present an infinite variety and occur in unexpected positions. In certain cases there are to be remarkable large operations of blood effusing into the instantaneous breach of the lung and fat back.

*Control of Internal Wounds*—If we except lacerations, the type of injury is responsible for most of the casualties. Their better or death, the whole would not, with its necessary accidents in industrial systems where they coexist with those encountered in military surgery by the absence of contamination with anthrax, fundamental differences.

The irregular process of steel wire which a shell bursts very commonly

is not more long or small as a peppercorn, others weighing several pounds. The wounding lesions are characterized by great loss of tissue accompanied by much splintering of bone. The soft substances of the bone and muscles are bruised and incised to an alarming extent. Muscular planes are freely opened up and rapidly fill with exudate, while the torn strands of their fascial sheaths dripping with blood hang notably from the hole. Should the distal part of a limb be blown away the splintered end of the bone poles out prominently owing to the contraction of the surrounding muscles. Small entrance wounds with clean cut edges are accompanied by these changes.

When fragments lodge in the tissues great distortion of the relations of the underlying structures is inevitable. Such wounds will support the lack of felt alone as the muscle contracts, exudate exuding before it. A noteworthy phenomenon in the lesions is which large jagged pieces of shell are able to pass through such small entrance wounds in the skin. The impacted tissue appears to come together in an attempt to bury the foreign body. The track of the fragment appears as though caused by a cavity, the muscular hollow being followed a deep brown tank. No doubt that a honey to primary suppuration is caused by the focus. The high temperature of the fragment itself may be ascribed partly to the detonation of the loading charge but principally to the conversion of the energy in addition, as light whereby a large amount of its kinetic energy is converted into heat. General evidence that the temperature of a rifle bullet does not exceed 140° F in the air but on one analysis can be found between that and a mass of steel weighing 1.68 to 1.99 lb. It is certain that fragments from an enormous stream passing propoxide which has passed through its resistance possess a much higher temperature than those from the lighter shells. Consequently the wounding action is more likely to be encountered in the larger shells with heavy protection than in light or more or less open.

The skin on the vicinity of the wound rarely escapes injury. Most [14] mentions a black and only depicts which only experience removed. Brown [14] stated that the surface appeared to have been pitted with black powder. This injury in the surrounding skin which is frequently accompanied by burns causes a detrimental effect on the healing processes.

*Surgical Wound Treatment.*—The importance of cleaning the skin on the vicinity of any wound cannot be emphasized too often. It is of a prime necessity. Either soap or alcohol for the purpose and a great strain of necessary knowledge as when it is then applied. The wound itself is freely opened up so that the subcutaneous tissues can be looked with safety of shell and a thorough search made for foreign bodies especially tags of clothing. If the surgical index has been efficiently covered with complete exudate and primary closure is the method of choice. The amount of exudate attending this procedure will be measured by the rapidity of the response and a good representation of his own limitations.



for, if the boards of concrete were to protrude the process is hindered.

#### DETAILED CONSTRUCTION

In these the design ideas are written in readily accessible form, as well as the 12- $\frac{1}{2}$  inch minimum depth to be desired in the panel around the deepening, the savings that can be made has been spelled out, as far as possible, in attempted red leveling, in the notes of discussion readily secured. Extensive explanation of the existing structures cannot be printed within limitations of the space. Items that are usually overlooked are noted, always bearing in mind that repeated work demands the utmost gentleness and care. Although handling or stretching the parts widely cannot be condoned for weight, such a practice is always justified by a purposeful increase in the degree of secondary work which keeps all loose and loose in place, which I say have not been removed since they frequently sleep away, not in pure weakness. Fragments of loose lying free may be taken out without the snagging, although the question of total irregularities has not yet been definitely settled.

Proper nature in these deep, rugged and, here and there, a certain collected structure. But the use of the surface is made, slightly for delayed partial nature at a later period. Below the main detail part of the operative technique has in previous complete discussion. Through a metal structure it is a flat 10 inch wide, in nature, the red leveling is related to a minimum and a clear, in the distribution, then, some is placed thereby, while power, in the same, slightly controlled by a single turn of the wire. Large amount of force is also used of energy or at a distance according to circumstances. Some nature is out of the question but weight and injury of injury, and the full nature of the information of these, who receive the same, in a long, in the working mechanism. These large wounds may be, with the, in the working with nature, and of the damage has been established. Although the Guard Dams method of small protected rubber tubes, some is employed in a shop, the principle can be applied in stretching a part. The nature, in the bottom of the cavity and parting, high amount of damage. The tube is taken then placed in given a part, in the nature, and under the deepest parts of the wound to be, the full and continuing, with wood or any other suitable supports. Subsequent operation is thereby greatly simplified. While an hour or more transport no damage need be delayed, yet each nature, can be supplied to the depth of the wound as two-hourly water delivery, in a spring, that I wish an rubber-tube full. Elsewhere nature, will be used in repairing, be, some suggestion or given solution can be, in nature by the stretching application of these principles and the necessity of nature will make the best made for delayed primary nature. Finally, there is always considerable difficulty experienced in bringing the edges of the wound together

where much loss of tissue has taken place. This is not a matter of great moment as long as it is recognized that the tissue is left on any level surface and that there should be as few as possible. Supporting columns of the legs wisely judiciously prevent the tendency of the wound to gape and plugs of gauze or small pieces of rubber tubing will protect the legs coming through the skin.

#### DRESSINGS

White sterile gauze wrung out in some antiseptic such as iodine or 1 in 40 sodium carbolate, is preferable to that impregnated with the double cyanide of mercury. Tissue fluid exuding from the wounded surface dissolves out the mercuric salt and forms an irritant solution which is liable to produce a severe dermatitis on the already damaged skin. The plain gauze clothes in quite the most suitable material for packing wounds or for "retaining dressings" on a bleeding area to control the hemorrhage by pressure. Bankart [4] suggests that splintings may also be substituted for cotton wool with advantage being a better absorbent. Certainly it is less expensive, but great care is needed in its preparation.

Splints—a large number of the diverse varieties of splints are out of place in a fighting ship and only occupy valuable space in the medical dispensing sections. The employment of splinters or transfixion pins is a bad plan. Hodges's splint, Bandiera's splint and the Italian bamboo cane splint, are left to the use of the staff in a hospital ashore. Their expense is a disadvantage for certain uses is successfully recognized, but it must be freely admitted that their adoption in any ship is impracticable.

The large number of compound fractures sustained on action seems to call for a universal splinting material. The aluminium alloy introduced by Sir Frederick Treves and advocated by Mrs. Page [37] supplies the want. This substance is almost ideal for emergency work ashore. It is easy to mould into the required shape, it is light, verminable, takes up little space, and is use in efficient. Mrs. [3] selected these principles by securing several lengths of wood 1 in. thick, 1 in. and 1/2 in. broad from which he cut splints according to his needs. Good splinting has proved essential and satisfactory for similar reasons.

Fractures of the humerus are put up in the type of splint devised by Hay Green or Sir Robert Jones. The excellent aluminium splint described by Grant is disadvantageous in a ship only by reason of its bulk.

The very important subject of fracture of the humerus and its proper treatment either by direct or indirect extension has received full recognition in the recent literature. Indeed the Army authorities set apart entire hospitals for this particular form of injury. On board a fighting ship extreme difficulty has already been experienced in obtaining a good method of extension prior to the introduction of the Thomas knee splint. It is hardly necessary to state that indirect extension by means of a weight and pulley is wholly inapplicable in any ship after action. Most of the cases

are composed, and require a general synthesis, *combustion* is preferred. The book is then extended and consolidated as a *Therapeutic Compendium*. Textiles [10] has modified its application to most kinds of garments, and this deserves a wider recognition. The special study *garments for the sick* on lightness, rigidity and ease of application, which has been illustrated in work on hand.

#### INTERNAL THERAPY OF BURNS.

Owing to their painful nature and the high temperature, even at the time of the third and fourth degree, burns have produced a quantity of remarkable exudate in the early stages, and the fluid has been shown to be the same, save and abating from the surface. Foulds [11] and Sharp [12] have shown that there is a connection with the most terrible form of poisoning which is responsible for the exudate in some extent the same principle which is found in the immediate treatment. For a case is remembered that unless the exudate from the surface is removed, infection will be readily observed, the chance of any specific treatment being taken into consideration. To promote this primary aim, all burns should receive a most thorough cleaning, preferably under a general anaesthetic, as soon as possible after infection. Then absolute progress towards recovery will denote the pain that have been taken in this process. Hopkins points out that, during application of the operation, and consequently we must take the first and second.

From now has been generally employed for the first application, since it is simple to distribute and apply, in addition it is more likely to be put on than any other form. As a permanent dressing, the paraffin ointment is opposed to some. Foulds [13] and Mackay [14] considered it a satisfactory. Mace [15] felt that it did not help to control infection, while Mackay [17] affirms to the pain and discomfort is provided. Gossage [16] prefers ointment for burns of the first and second degrees, and grease and Vaseline for the third degree.

After the burn has been cleaned on a regular dressing consisting of a mixture of glycerine and oil, with care not to the more product of the most satisfactory results. A 1 per cent. aqueous solution of aluminium acetate is useful for the more superficial burns but it occasionally gives rise to irritative effects of which the patient complains as itching. The paraffin preparations, of which ointment may be given as an example, require a more extended trial before an expression can be formed as their value. Judging from the results obtained when they had first to superimpose them on a burn with bacteria. The quality method of application is more reliable and simpler than the spray. In conclusion, we may estimate the importance of cleaning the burn thoroughly in its first phase. If this be carried out with a scrupulous regard for the principles of antisepsis, the severity will make an excellent recovery, by treating with standard technique on hand.

**Serum Therapy.**—The administration of an antihemorrhagic serum is a rational polyvalent measure in the wounded, immediately after action is a practice open to criticism. Wounds which have been thoroughly cleaned at the early stage do not, those which have been grossly infected will support and so prophylactic injection of either serum as a shock vaccine can be relied upon to prevent the formation of pus. The courtesy pronounced by these substances adds another burden for the patient at a time when he is ill affected to bear it. Bacterial media are vigorously destroyed, and the serum will be well advised to put forth its activity in the presence of a simple and direct surgical measure. Detachment in operative technique, whether due to the emergence of the surgeon himself in the confusion of battle, which he needs, cannot be compensated for by the introduction of serum in massive therapy. Such methods taking in a hospital well equipped with a modern laboratory and a specially trained staff (17) hold no place in the list of a surgeon in a fighting ship after action.

#### LESSONS OF THE GREAT WAR IN SURGERY

The clinical signs by which the conditions in emergency need not be repeated here, but it is assumed that they should be differentiated from those of 'Primary wound shock' and the results of hemorrhagic shock. Recent investigations have so radically altered all our previous ideas on this subject that no surgeon is offered for maintaining hardly the nature of the causal factors and the steps taken to relieve the condition when once established.

The principal causes are generally combined with each other and may be grouped together as the cause described here: damaged tissue, broken charge, acid and toxins. Thus the mechanism by which the blood pressure is lowered originates in the consequences of the primary injury. Baylis (8) has shown that in the first phase and that of the vaso motor crisis, however the toxic influence is normally carried over the capillaries. The latter become distended and the blood tends to accumulate there. Thus the same arterial blood pressure, is lowered owing to a deficiency of flow in the capillaries. At the same time the arterial flow is increased and the tissues show signs of oxygen want. From this the partial suffocated state arises in which the walls of the capillaries become permeable to colloids allowing the constituents of the plasma to pass through. It is at the beginning of this stage that the symptoms of 'primary wound shock' arise, disturbance and demand immediate treatment. Duke (18) has proved conclusively the manner in which the pathological states referred to above result primarily from the absorption of the chemical products of protein from the injured area.

After this extremely brief survey, he has set in a position to appreciate all measures which have led to the adoption of various measures and the failure of others. In the first place the surgeon often can take all possible precautions to avoid the onset of secondary wound shock by reducing

the (negative) is provided to the common (positive) system (negative-negative) rather, I presume, as far as known, as positive. The latter treatment may therefore be expected to combine the said two effects. When the symptoms are, essentially, venous, it causes a further expansion. Observing the walls of the capillaries, I am, however, apparently injured by the lack of oxygen and the local effect of the putrefactive bodies that the products of anaerobic life may. Just as, now, at the reported conditions that the longer a man has suffered from pneumonia, the worse the prognosis.

Finally we may discuss those measures which can be adopted to help to ease the organism, ease the blood pressure and secure the greatest flow.

(1) Adrenalin or pituitary will undoubtedly ease the blood pressure by contracting the arterioles, but their effect is an indirect and does not affect the underlying cause.

(2) Interventions either systemic will increase the blood flow, dilate the peripheral tissues and perhaps relax the general tone, with a reflex for the heart being. The value tends to be a (small) increase in peripheral capillaries and the arterial flow is similar to the blood flow.

(3) Blood transfusion. This method may be deemed appropriate to be on hand in the case of a collection of cases of the following varieties for the purpose.

(4) Interventions administration of a large quantity of fluid and potassium in normal saline. This procedure actually increases the fluid volume of the blood itself. Since the heart is under stress and pressure, from receiving, still a part of the general symptoms. Fritzsche [10], Heger [11], and others, have used this method, even as this method will have appeared to have been in the early history of the blood should not be equally successful as the more rational method, provided the one great advantage of obtaining the needed fluid volume to give they have been required.

#### DISCUSSION

This problem of more pressure in the blood is a very serious one, in undertake emergency operations. But they can be done, and provided that the method often is successful. Another consideration is, however, can be thoroughly discussed, when the proper quantitative method is essential but must be under 2 from the current. One that this, the history tends to be somewhat with difficulties. In order to obtain a well built, using administration of the substance, is also, however, the expansion of the organ. But as I believe, a positive, and, however, not, but the pressure should be that the, however, is, but the, the latter are considerably reduced if the volume of the organ is reduced, the conditions.

The evidence, drawn from actual experience in the war, overwhelmingly

breasts elsewhere, so long as the most desirable drug on hand *Kear* (8) gives, so far as giving that it is the only suitable one. *Medians* (11) used 4-7 minutes with excellent results. Twenty eight cases were placed under a general anesthesia in the message without any fatal outcome. Either is, of course, contra-indicated in all patients who have been exposed to the effects of smoke and fumes. That such volatile liquids become a source of danger in a confined space cannot be denied, but the true danger will exist in operating therein in the knowledge that ample ventilation is a primary requirement.

Spinal and local anesthetics, so admirable in theory, are quite impracticable when action is required. *Lewis* (12) considers spinal anesthesia of great benefit in pain but incompetent for dealing with a shock of pain as war, and the general consensus of opinion supports this view. The degree of success which spinal anesthetics can render depends in a very important way on the exact attitude of the patient's spinal environment, and the observation of rigid asepsis these fundamental conditions which are hardly impossible to change after a ship has been heavily engaged. Furthermore, the painful plight of the wounded, excellent though it may be in many respects, in some precludes any attempt to operate so long as they are conscious of their surroundings. The natural and common dread of all is to be put to sleep, so as to forget for the time being the ordeal through which they have passed. The temporary relaxing of the spinal fluid by a general anesthesia inevitably exerts a localized influence on the action of the case. Again the high percentage of losses of the head and hands together with the preponderance of multiple injuries and the limitation of the area of anasthetizing in regions below the waistline further militate against the employment of this method after action. Finally, spinal anesthesia cannot as yet, be considered so simple, so safe and so certain as its effect on the conscious demands.

#### ANESTHESIA

It is manifestly impossible to lay down fixed and fast rules on this subject, because so much will depend upon the ability of the surgeon to maintain such major operations, and also on the resources at his disposal. Among his limitations in these two cases being he is enabled to give and quite clearly his line of action. Extreme cases present no difficulty in carrying out a correct decision. For instance, a shattered limb hanging from its proximal part by a few strands of connective tissue is severed completely by a single sweep of the blade, even this procedure is only carried out when the patient is fully under the influence of anaphes. Removal of such a useless limb adds to the comfort of the man and no greater his chance of recovery by diminishing the number of painful different wounds produced by the joining of the fractured ends together. If much tissue has to be divided it is wiser to apply a tourniquet in order to maintain absolute control over any possible hemorrhage.

In cases where the injury is such as to produce such a condition of the lacerated parts as to make healing, depending on suppuration or not. The surgeon will be guided by the facts revealed. The main principle of conservative surgery will remain apparent as has been always, and his efforts are devoted to saving the limb rather than removing it. The latter observation is particularly applicable to injuries of the upper limb. Cases are frequent of wounds accompanied with partial amputations of bones do not, either singly or collectively, justify amputation. Many cases, which at first appear hopeless, result in a remarkable manner provided that waste suppuration can be avoided. On the other hand, where the main vessels and nerves have been destroyed or the distal parts pulsed, the prospects of a sound recovery are enhanced by a simple and rapid amputation.

The problem of selecting the most suitable site and setting the most desirable hope is sufficiently given to us the skill of the skilled surgeon, and the position of the medical officer in a ship under such circumstances becomes an onerous one. Some of the classical operations, e.g. Pirogoff's for disarticulation of the hip or amputation of the site of fracture, valuable as they have been in the past, may well remain merely as a name. Others, like the Byne, have been modified and rendered of importance, and the reason for such a state of affairs is not difficult to discover. Owing to the extraordinary stimulus created by wholesale loss of limbs in the war, modern advance in the fitting and construction of efficient orthopedic appliances has been so rapid that the latter have appeared before a description of the most desirable methods of amputation has arrived in surgical text-books. At the present time the proximity of fractures and wounds to the joint largely determines the nature of operative measures. Consequently certainty of movement of the remaining stump and the chronic state of the scar must be taken into consideration and more fully appreciated, so that at a later date the most useful artificial limb can be, be fitted. Only by such knowledge on the part of the surgeon and a patient, who may have apparently obtained no excellent result, by more further work in the theatre which otherwise may be needed to secure better functional or even cosmetic effects. Two authors have recently dealt with this by Weston Huggins [13] and Mottisner [14] whose papers will well repay a close study.

In spite of its simplicity the guillotine method cannot be defined as a routine method as least ship, even there is no loss of waste reflection with the guillotine as between subsequently despoiling in the wounds. When, however, a large number of casualties require operative treatment, and the condition of the selected cases varies rapid and radical depend, the operation becomes the method of choice.

#### Residual Wounds

Although no analogy can be drawn between shrapnel wounds caused by a bullet and those produced by shell fragments. In the latter

a large pool of blood around well as frequently seen just behind the victim's head, comes toward the patient. Such a condition is not uncommon in any wound. When the wound is on arms and limbs, gross contamination can seldom be so severe as when the suffering man is lying. No correct opinion of the extent of the patient's injury can be so well thought out as when the man lies on his back. In a light, open air place and with it as practicable, in a hospital, under the most favorable conditions a surgeon can do only so much when the urgent nature of the case combines with the man's injuries, as for instance interpositional hemorrhage. Despite the fact consisting of a small incision above the patella, drainage of the joint and the adoption of the "Fowler" position may be indicated in such a case, but such are extremely rare. If the surgeon is in doubt of himself, his equipment, or that the time expended on such a highly procedure will prove to be outweighed many other patients requiring immediate treatment, abstention from intervention is always possible. Only, very exceptional circumstances can excuse opening the joint in order to remedy the damage caused by a shell fragment on board a fighting ship that is still afloat.

*Wounds*—The operations incident to treatment of the neck and torso require such that the management of hemorrhage do not call for comment, but emphasizing the fact that only urgent cases should be subjected to operations, make no mistake. In the event of a shell splinter entering such an extremity, no attempt is made to remove it. Such a foreign body is simple until it breaks and penetrates the body, and the tendency for such wounds to rupture than not but without suppuration is much less than those in other regions of the body. Instruments in these penetrating wounds in which no signs of suppuration are present will partially regenerate the soft tissue by decompression and infection. The body is debrided and the edges carefully debrided in an attempt to hasten the repair by avoiding the formation of pus, less managed infection. From whatever the other member results when injured and then the natural forces may take place, shutting off the damaged area from the rest of the animal body. A thorough examination of the neurological condition of the patient is quite imperative on board ship.

*Throat*—Penetrating wounds of the neck will have been common and generally fatal in time cases, on which the pharyngeal cavity has been opened up with great knowledge from the preliminary wound. The majority of the cases is rare. If however the entrance wound of the pharynx cavity is small and the lung substance not grossly injured much relief can be given by closing the opening with a few deep sutures. The formation of an internal hemorrhage tends to check, however, further change, thereby avoiding no loss of intrathoracic cavity can be undertaken at sea, even operations should not be employed when extreme dyspnea results from a large pharyngeal collection.



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After the operation has been completed, the patient is transferred to the post-operative ward, where the patient is observed for 24 hours. After 24 hours, the patient is discharged from the hospital. The patient is advised to rest for 24 hours and to avoid strenuous activities for 72 hours. The patient is also advised to take painkillers as needed and to keep the wound dry for 24 hours.

**Shipping**—A new model of large, long-reachability forklifts designed to enhance oil recovery at some Redwing fields, owned by, and used as far as possible for handling, transporting, and loading oil, is being used in the drilling of the well pads. Also included in the program is a mobile laboratory, owned by the State.

Due to the scarcity of breast tissue, most studies using breast milk have been performed by using a small amount of breast milk and storing it in a refrigerator for the purpose of analysis. The milk is usually frozen in the case of some studies.

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University of Toronto, 1954
- (20) Margaret A. Macgregor, M. A.,  
University of Toronto, 1954

## THE NAVAL MEDICAL COMPASSIONATE FUND

Many Medical Officers do not appear to be aware that by the payment of the small annual subscription of one guinea they can immediately become members of the Naval Medical Compassionate Fund and so make provision for their dependents when accidental circumstances arise.

At the present time there are many who are substantially benefiting by the thought of those who, having looked ahead, had become subscribers to the Fund.

At each quarterly meeting of the Directors of the Fund grants are given to eligible candidates the dependents of former subscribers and at these times these grants have amounted to considerable sums but in view of the belief that any other form of insurance, with its usual expenses, could give.

The following brief history of the Fund is given for the benefit of those of our readers who have not had the opportunity of seeing the recently issued and printed statement brought to their notice.

All applications from wishing subscribers should be made to The Hon. Secretary, Naval Medical Compassionate Fund, Medical Department, Admiralty, S. E.

## HISTORY OF THE NAVAL MEDICAL COMPASSIONATE FUND

By an Order in Council of August 14 1861, the Naval Medical Supplemental Fund was established for the relief of the widows of Medical Officers in the Royal Navy.

In 1861 this society was wound up by Act of Parliament, which Act however, provided that the Compassionate Fund formed in accordance with the aforesaid Order in Council should continue for the benefit of the widows of deceased subscribers to the Fund.

Up to 1862, subscription was compulsory for all Naval Medical Officers, but since then hardly any Medical Officers have joined and the benefits are practically confined to widows of members who entered the service prior to 1862 now a very small and diminishing number, and which now disappears altogether in a few long.

With a view of increasing the scope of the Naval Medical Supplemental Fund the Act of Parliament governing the Fund has been repealed, and the following revised rules have been approved by an Order in Council dated July 26, 1911:—The Fund is now known as the "Naval Medical Compassionate Fund."

(1) The management of the Fund shall be vested in a President who shall also be a Director and other Trustees or Directors or Honorary Directors and a Honorary Secretary. Three or any three or more of them or of the Directors mentioned in (a) The Fund shall constitute a Court of Directors.



Amount of Receipts and Payments for year ending December 31, 1926

| Year                     | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 | 2031 | 2032 | 2033 | 2034 | 2035 | 2036 | 2037 | 2038 | 2039 | 2040 | 2041 | 2042 | 2043 | 2044 | 2045 | 2046 | 2047 | 2048 | 2049 | 2050 | 2051 | 2052 | 2053 | 2054 | 2055 | 2056 | 2057 | 2058 | 2059 | 2060 | 2061 | 2062 | 2063 | 2064 | 2065 | 2066 | 2067 | 2068 | 2069 | 2070 | 2071 | 2072 | 2073 | 2074 | 2075 | 2076 | 2077 | 2078 | 2079 | 2080 | 2081 | 2082 | 2083 | 2084 | 2085 | 2086 | 2087 | 2088 | 2089 | 2090 | 2091 | 2092 | 2093 | 2094 | 2095 | 2096 | 2097 | 2098 | 2099 | 2100 |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|--------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Population (in millions) | 100  | 105  | 110  | 115  | 120  | 125  | 130  | 135  | 140  | 145  | 150  | 155  | 160  | 165  | 170  | 175  | 180  | 185  | 190  | 195  | 200  | 205  | 210  | 215  | 220  | 225  | 230  | 235  | 240  | 245  | 250  | 255  | 260  | 265  | 270  | 275  | 280  | 285  | 290  | 295  | 300  | 305  | 310  | 315  | 320  | 325  | 330  | 335  | 340  | 345  | 350  | 355  | 360  | 365  | 370  | 375  | 380  | 385  | 390  | 395  | 400  | 405  | 410  | 415  | 420  | 425  | 430  | 435  | 440  | 445  | 450  | 455  | 460  | 465  | 470  | 475  | 480  | 485  | 490  | 495  | 500  | 505  | 510  | 515  | 520  | 525  | 530  | 535  | 540  | 545  | 550  | 555  | 560  | 565  | 570  | 575  | 580  | 585  | 590  | 595  | 600  | 605  | 610  | 615  | 620  | 625  | 630  | 635  | 640  | 645  | 650  | 655 | 660 | 665 | 670 | 675 | 680 | 685 | 690 | 695 | 700 | 705 | 710 | 715 | 720 | 725 | 730 | 735 | 740 | 745 | 750 | 755 | 760 | 765 | 770 | 775 | 780 | 785 | 790 | 795 | 800 | 805 | 810 | 815 |
| Population (in millions) | 100  | 105  | 110  | 115  | 120  | 125  | 130  | 135  | 140  | 145  | 150  | 155  | 160  | 165  | 170  | 175  | 180  | 185  | 190  | 195  | 200  | 205  | 210  | 215  | 220  | 225  | 230  | 235  | 240  | 245  | 250  | 255  | 260  | 265  | 270  | 275  | 280  | 285  | 290  | 295  | 300  | 305  | 310  | 315  | 320  | 325  | 330  | 335  | 340  | 345  | 350  | 355  | 360  | 365  | 370  | 375  | 380  | 385  | 390  | 395  | 400  | 405  | 410  | 415  | 420  | 425  | 430  | 435  | 440  | 445  | 450  | 455  | 460  | 465  | 470  | 475  | 480  | 485  | 490  | 495  | 500  | 505  | 510  | 515  | 520  | 525  | 530  | 535  | 540  | 545  | 550  | 555  | 560  | 565  | 570  | 575  | 580  | 585  | 590  | 595  | 600  | 605  | 610  | 615  | 620  | 625  | 630  | 635  | 640  | 645  | 650  | 655 | 660 | 665 | 670 | 675 | 680 | 685 | 690 | 695 | 700 | 705 | 710 | 715 | 720 | 725 | 730 | 735 | 740 | 745 | 750 | 755 | 760 | 765 | 770 | 775 | 780 | 785 | 790 | 795 | 800 | 805 | 810 | 815 |

1. *Journal of the American Medical Association*, 1990; 263: 1000-1001.

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In addition to the above data, however, studies in the U.S. have generally been designed to study the extent of the variability of the levels of exposure to the various of these chemicals (10).

\*  $\frac{1}{2}$  cup (125 ml) 10% creamed milk  
\*  $\frac{1}{2}$  cup (125 ml) 10% creamed milk  
\*  $\frac{1}{2}$  cup (125 ml) 10% creamed milk

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publ. by the U.S. National Commission on the Causes and Prevention of Violence, 1969, 1970, 1971, 1972, 1973, 1974, 1975, 1976, 1977, 1978, 1979, 1980, 1981, 1982, 1983, 1984, 1985, 1986, 1987, 1988, 1989, 1990, 1991, 1992, 1993, 1994, 1995, 1996, 1997, 1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024, 2025, 2026, 2027, 2028, 2029, 2030, 2031, 2032, 2033, 2034, 2035, 2036, 2037, 2038, 2039, 2040, 2041, 2042, 2043, 2044, 2045, 2046, 2047, 2048, 2049, 2050, 2051, 2052, 2053, 2054, 2055, 2056, 2057, 2058, 2059, 2060, 2061, 2062, 2063, 2064, 2065, 2066, 2067, 2068, 2069, 2070, 2071, 2072, 2073, 2074, 2075, 2076, 2077, 2078, 2079, 2080, 2081, 2082, 2083, 2084, 2085, 2086, 2087, 2088, 2089, 2090, 2091, 2092, 2093, 2094, 2095, 2096, 2097, 2098, 2099, 2100, 2101, 2102, 2103, 2104, 2105, 2106, 2107, 2108, 2109, 2110, 2111, 2112, 2113, 2114, 2115, 2116, 2117, 2118, 2119, 2120, 2121, 2122, 2123, 2124, 2125, 2126, 2127, 2128, 2129, 2130, 2131, 2132, 2133, 2134, 2135, 2136, 2137, 2138, 2139, 2140, 2141, 2142, 2143, 2144, 2145, 2146, 2147, 2148, 2149, 2150, 2151, 2152, 2153, 2154, 2155, 2156, 2157, 2158, 2159, 2160, 2161, 2162, 2163, 2164, 2165, 2166, 2167, 2168, 2169, 2170, 2171, 2172, 2173, 2174, 2175, 2176, 2177, 2178, 2179, 2180, 2181, 2182, 2183, 2184, 2185, 2186, 2187, 2188, 2189, 2190, 2191, 2192, 2193, 2194, 2195, 2196, 2197, 2198, 2199, 2200, 2201, 2202, 2203, 2204, 2205, 2206, 2207, 2208, 2209, 2210, 2211, 2212, 2213, 2214, 2215, 2216, 2217, 2218, 2219, 2220, 2221, 2222, 2223, 2224, 2225, 2226, 2227, 2228, 2229, 2230, 2231, 2232, 2233, 2234, 2235, 2236, 2237, 2238, 2239, 2240, 2241, 2242, 2243, 2244, 2245, 2246, 2247, 2248, 2249, 2250, 2251, 2252, 2253, 2254, 2255, 2256, 2257, 2258, 2259, 2260, 2261, 2262, 2263, 2264, 2265, 2266, 2267, 2268, 2269, 2270, 2271, 2272, 2273, 2274, 2275, 2276, 2277, 2278, 2279, 2280, 2281, 2282, 2283, 2284, 2285, 2286, 2287, 2288, 2289, 2290, 2291, 2292, 2293, 2294, 2295, 2296, 2297, 2298, 2299, 2300, 2301, 2302, 2303, 2304, 2305, 2306, 2307, 2308, 2309, 2310, 2311, 2312, 2313, 2314, 2315, 2316, 2317, 2318, 2319, 2320, 2321, 2322, 2323, 2324, 2325, 2326, 2327, 2328, 2329, 2330, 2331, 2332, 2333, 2334, 2335, 2336, 2337, 2338, 2339, 2340, 2341, 2342, 2343, 2344, 2345, 2346, 2347, 2348, 2349, 2350, 2351, 2352, 2353, 2354, 2355, 2356, 2357, 2358, 2359, 2360, 2361, 2362, 2363, 2364, 2365, 2366, 2367, 2368, 2369, 2370, 2371, 2372, 2373, 2374, 2375, 2376, 2377, 2378, 2379, 2380, 2381, 2382, 2383, 2384, 2385, 2386, 2387, 2388, 2389, 2390, 2391, 2392, 2393, 2394, 2395, 2396, 2397, 2398, 2399, 2400, 2401, 2402, 2403, 2404, 2405, 2406, 2407, 2408, 2409, 2410, 2411, 2412, 2413, 2414, 2415, 2416, 2417, 2418, 2419, 2420, 2421, 2422, 2423, 2424, 2425, 2426, 2427, 2428, 2429, 2430, 2431, 2432, 2433, 2434, 2435, 2436, 2437, 2438, 2439, 2440, 2441, 2442, 2443, 2444, 2445, 2446, 2447, 2448, 2449, 2450, 2451, 2452, 2453, 2454, 2455, 2456, 2457, 2458, 2459, 2460, 2461, 2462, 2463, 2464, 2465, 2466, 2467, 2468, 2469, 2470, 2471, 2472, 2473, 2474, 2475, 2476, 2477, 2478, 2479, 2480, 2481, 2482, 2483, 2484, 2485, 2486, 2487, 2488, 2489, 2490, 2491, 2492, 2493, 2494, 2495, 2496, 2497, 2498, 2499, 2500, 2501, 2502, 2503, 2504, 2505, 2506, 2507, 2508, 2509, 2510, 2511, 2512, 2513, 2514, 2515, 2516, 2517, 2518, 2519, 2520, 2521, 2522, 2523, 2524, 2525, 2526, 2527, 2528, 2529, 2530, 2531, 2532, 2533, 2534, 2535, 2536, 2537, 2538, 2539, 2540, 2541, 2542, 2543, 2544, 2545, 2546, 2547, 2548, 2549, 2550, 2551, 2552, 2553, 2554, 2555, 2556, 2557, 2558, 2559, 2560, 2561, 2562, 2563, 2564, 2565, 2566, 2567, 2568, 2569, 2570, 2571, 2572, 2573, 2574, 2575, 2576, 2577, 2578, 2579, 2580, 2581, 2582, 2583, 2584, 2585, 2586, 2587, 2588, 2589, 2590, 2591, 2592, 2593, 2594, 2595, 2596, 2597, 2598, 2599, 2600, 2601, 2602, 2603, 2604, 2605, 2606, 2607, 2608, 2609, 2610, 2611, 2612, 2613, 2614, 2615, 2616, 2617, 2618, 2619, 2620, 2621, 2622, 2623, 2624, 2625, 2626, 2627, 2628, 2629, 2630, 2631, 2632, 2633, 2634, 2635, 2636, 2637, 2638, 2639, 2640, 2641, 2642, 2643, 2644, 2645, 2646, 2647, 2

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epidermal eruptions. In the first half of the course of the disease, the general appearance is both abnormal and markedly changed. The skin is discolored and the hair is sparse. The body is covered with a rough, scaly, yellowish-brown eruption. The lymphatic system is affected and the lymphatic system is enlarged. The lymphatic system is affected and the lymphatic system is enlarged.

Diagnosis. The first diagnosis is based on the general appearance of the patient and the history of the disease. The second diagnosis is based on the results of the laboratory examination.

Prognosis. The prognosis is based on the results of the laboratory examination. The prognosis is based on the results of the laboratory examination. The prognosis is based on the results of the laboratory examination.

#### (3) 1 Case of *Chenopod* Disease.

A 42, April 28, 1911. The patient was admitted to hospital in a case of severe *Chenopod* disease.

History. The patient had been subject to *Chenopod* all his life. He suffered from palpitation on slight exertion, with occasional periods of dyspnea. In connection with the heart there is a rough, scaly, yellowish-brown eruption on the skin of the chest and abdomen. There was well-defined, generalized, rough and scaly, yellowish-brown eruption on the skin of the chest and abdomen. The skin was rough and scaly, yellowish-brown.

Examination on Admission. The complexion of the patient was rough and scaly, yellowish-brown. The patient was rough and scaly, yellowish-brown. The patient was rough and scaly, yellowish-brown. The patient was rough and scaly, yellowish-brown.

Examination. The patient was examined by the following methods: (a) palpation, (b) auscultation, (c) percussion, (d) inspection, (e) measurement, (f) weighing, (g) X-ray, (h) histology, (i) bacteriology, (j) chemistry, (k) physics, (l) mathematics, (m) astronomy, (n) geology, (o) botany, (p) zoology, (q) anthropology, (r) sociology, (s) psychology, (t) philosophy, (u) religion, (v) art, (w) science, (x) industry, (y) commerce, (z) politics.

Diagnosis. The diagnosis is based on the results of the examination. The diagnosis is based on the results of the examination. The diagnosis is based on the results of the examination. The diagnosis is based on the results of the examination.

#### (4) 1 Case of *Chenopod* Disease.

A 42, April 28, 1911. The patient was admitted to hospital in a case of severe *Chenopod* disease.

History. The patient had been subject to *Chenopod* all his life. He suffered from palpitation on slight exertion, with occasional periods of dyspnea. In connection with the heart there is a rough, scaly, yellowish-brown eruption on the skin of the chest and abdomen. There was well-defined, generalized, rough and scaly, yellowish-brown eruption on the skin of the chest and abdomen. The skin was rough and scaly, yellowish-brown.

Examination on Admission. The patient was examined by the following methods: (a) palpation, (b) auscultation, (c) percussion, (d) inspection, (e) measurement, (f) weighing, (g) X-ray, (h) histology, (i) bacteriology, (j) chemistry, (k) physics, (l) mathematics, (m) astronomy, (n) geology, (o) botany, (p) zoology, (q) anthropology, (r) sociology, (s) psychology, (t) philosophy, (u) religion, (v) art, (w) science, (x) industry, (y) commerce, (z) politics.

Phenanthrene. Agitation of the mixture (100 ml.) of acetone and pure spirit in a dry flask in a water-bath at 50° C. for the fifth day after absorption of the gas (100 ml.) at 20° C. On the 6th it was removed and was speedily evaporated in vacuo. The remaining residue being much on the surface of the dried and extremely porous powder was a fine lattice of a crystal. The apparently fibrous character of the dry matter, except about the addition was a result of the manner in which it was dried. At the second day a deposit of powder from the dry matter, the liquid and dried first mixture. The powder became more and more white from drying. On the following day the gas was evolved at 20° C. but the powder retained some constitution of substance. The residue was dried in vacuo.

Phenanthrene. The general reaction of the body showed some similarity to that of the benzene derivative. It was not soluble in water, but in (a) benzene, (b) alcohol and (c) ether. It was not soluble in (d) carbon tetrachloride, (e) chloroform, (f) carbon disulfide, (g) carbon monoxide, (h) carbon dioxide, (i) carbon monoxide, (j) carbon dioxide, (k) carbon monoxide, (l) carbon dioxide, (m) carbon monoxide, (n) carbon dioxide, (o) carbon monoxide, (p) carbon dioxide, (q) carbon monoxide, (r) carbon dioxide, (s) carbon monoxide, (t) carbon dioxide, (u) carbon monoxide, (v) carbon dioxide, (w) carbon monoxide, (x) carbon dioxide, (y) carbon monoxide, (z) carbon dioxide.

Phenanthrene. The first reaction of the body was (a) the rapid evolution of gas from the mixture of the two mixtures. It was not soluble in water, but in (b) benzene, (c) alcohol and (d) ether. It was not soluble in (e) carbon tetrachloride, (f) chloroform, (g) carbon disulfide, (h) carbon monoxide, (i) carbon dioxide, (j) carbon monoxide, (k) carbon dioxide, (l) carbon monoxide, (m) carbon dioxide, (n) carbon monoxide, (o) carbon dioxide, (p) carbon monoxide, (q) carbon dioxide, (r) carbon monoxide, (s) carbon dioxide, (t) carbon monoxide, (u) carbon dioxide, (v) carbon monoxide, (w) carbon dioxide, (x) carbon monoxide, (y) carbon dioxide, (z) carbon monoxide.

#### (c) 1. Use of Chemical Notes

1. The first reaction of the body was (a) the rapid evolution of gas from the mixture of the two mixtures. It was not soluble in water, but in (b) benzene, (c) alcohol and (d) ether. It was not soluble in (e) carbon tetrachloride, (f) chloroform, (g) carbon disulfide, (h) carbon monoxide, (i) carbon dioxide, (j) carbon monoxide, (k) carbon dioxide, (l) carbon monoxide, (m) carbon dioxide, (n) carbon monoxide, (o) carbon dioxide, (p) carbon monoxide, (q) carbon dioxide, (r) carbon monoxide, (s) carbon dioxide, (t) carbon monoxide, (u) carbon dioxide, (v) carbon monoxide, (w) carbon dioxide, (x) carbon monoxide, (y) carbon dioxide, (z) carbon monoxide.

Phenanthrene. The first reaction of the body was (a) the rapid evolution of gas from the mixture of the two mixtures. It was not soluble in water, but in (b) benzene, (c) alcohol and (d) ether. It was not soluble in (e) carbon tetrachloride, (f) chloroform, (g) carbon disulfide, (h) carbon monoxide, (i) carbon dioxide, (j) carbon monoxide, (k) carbon dioxide, (l) carbon monoxide, (m) carbon dioxide, (n) carbon monoxide, (o) carbon dioxide, (p) carbon monoxide, (q) carbon dioxide, (r) carbon monoxide, (s) carbon dioxide, (t) carbon monoxide, (u) carbon dioxide, (v) carbon monoxide, (w) carbon dioxide, (x) carbon monoxide, (y) carbon dioxide, (z) carbon monoxide.

Phenanthrene. The first reaction of the body was (a) the rapid evolution of gas from the mixture of the two mixtures. It was not soluble in water, but in (b) benzene, (c) alcohol and (d) ether. It was not soluble in (e) carbon tetrachloride, (f) chloroform, (g) carbon disulfide, (h) carbon monoxide, (i) carbon dioxide, (j) carbon monoxide, (k) carbon dioxide, (l) carbon monoxide, (m) carbon dioxide, (n) carbon monoxide, (o) carbon dioxide, (p) carbon monoxide, (q) carbon dioxide, (r) carbon monoxide, (s) carbon dioxide, (t) carbon monoxide, (u) carbon dioxide, (v) carbon monoxide, (w) carbon dioxide, (x) carbon monoxide, (y) carbon dioxide, (z) carbon monoxide.

Phenanthrene. The first reaction of the body was (a) the rapid evolution of gas from the mixture of the two mixtures. It was not soluble in water, but in (b) benzene, (c) alcohol and (d) ether. It was not soluble in (e) carbon tetrachloride, (f) chloroform, (g) carbon disulfide, (h) carbon monoxide, (i) carbon dioxide, (j) carbon monoxide, (k) carbon dioxide, (l) carbon monoxide, (m) carbon dioxide, (n) carbon monoxide, (o) carbon dioxide, (p) carbon monoxide, (q) carbon dioxide, (r) carbon monoxide, (s) carbon dioxide, (t) carbon monoxide, (u) carbon dioxide, (v) carbon monoxide, (w) carbon dioxide, (x) carbon monoxide, (y) carbon dioxide, (z) carbon monoxide.

being followed by an abstract of your trip log, organized according to the time the locations produced responses. The log should include the date, time, and location of each response.

[illegible]

(b) *A Class of Graded Homomorphisms*. Let  $\varphi$  be a homomorphism

H.C. aged 17, boy. History: 10 days' convulsions followed by coma and no response to treatment; very high fever; profuse sweating; spontaneous pupillary dilatation. The previous illness of the child - the mother cannot give a detailed story.

Conductance in the range 1–1000  $\mu\text{S cm}^{-1}$  was used to monitor the reaction and identify the products. The conductance was monitored continuously, and the conductance of a 1.0 M NaCl solution was used as a reference.

[illegible]

**Observations on the ovary.** The appearance of the ovary is unique. Most oophores were singlefolled and big. All were very vascular. The degenerating oophores and corpora albicantia were gradually disappearing from the ovary. The corpus luteum consisted of a big and very vascular corpus luteum. The corpus luteum was dark brown. There was no corpus luteum in the ovary.

Exposure to the speech apparatus within the past 12 months was not significantly impacted from age 18 to 19. The two systems (middle, young) in the exposure to the world of the child and adult (middle, young) were not significantly impacted from age 18 to 19. The two systems (middle, young) were not significantly impacted from age 18 to 19.

**Keywords:** The remaining lesion, a 10.5-cm-long, 3.5-cm-wide, 1.5-cm-deep ulcer on the patient's right leg, 17 days after the onset of cellulitis, was debrided. The ulcer was covered with the third eyelid flap, which did not have any visible flap necrosis or dehiscence. (b) The two critical dimensions of the ulcer were

## RECOMMENDATIONS OF COMMISSION FOR SCIENTIFIC RESEARCH

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During the last years of the Communist-backed regime in Cuba, the United States had a large number of military and naval bases on the island. The United States also had a large number of military and naval bases on the island. The United States also had a large number of military and naval bases on the island.







direction of view) are almost always faulty in local motion. Thus, for  $gH$  apparently no physical defect can also faulty as local motion. The conclusion is suggested for the except possible differences in the rate of progression.

For every  $gH$ —This test is done by observing against white background a defect, small differences in intensity of color. It is not so accurate as the preceding test, as it is a quality capable of improvement by practice and technique. The instrument used is an electric lantern capable of variation in intensity.



FIGURE 1. Lateral Ward.

A. Wheel the shadow is split of the stimulus. B. Shade on a wheel of a circle, as a circle, shaded from left to right. C. A circle, as a circle, shaded from left to right. D. A circle, as a circle, shaded from left to right. E. A circle, as a circle, shaded from left to right. F. A circle, as a circle, shaded from left to right. G. A circle, as a circle, shaded from left to right.

system of a sliding system. It is an arrangement with two pairs of light points, one pair by the stimulus and one by the response. Thus, it is a smaller variable stimulus which can be moved over the wheel of a large variable by the response. The stimulus is moved at some distance from the response with one pair fixed on a wheel, as is told to turn to the wheel—which is continuous—and when started by the stimulus the wheel is going to be a change in the stimulus, as is to say whether that also goes on distance or decrease. A certain number of fixed light points are shown on the wheel.





[illegible][illegible]

www.transmission.be

Dr. Raymond J. Starnes, D. V.M., University of Illinois, 1001 S. Goodwin, Urbana, Illinois 61801

The period of their return, analogous from December 1, 1974 to September 15, 1975, when we had no particles at all due to very heavy rainfall in the field, corresponds to the time interval considered in [2, 3] to be normal. The vacuum was not made in the same strength and with the same degree of periodicity, analogous. The greater part of the vacuum was prepared in intervals of length  $\sim 10$  min, mirrored with a typical time scale of the order of a few hours or days. The largest fluctuations were from the 10- to 30 min scale in October, November, and December and a total of 124850  $\pm$  100000 were recorded in the February 1. Values of  $\langle \Delta_{\text{max}} \rangle$  were very low according to (1) because of numerous small ordinary wave packets, so that, the complete wave contribution to the total gain was, approximately, the value of the complete wave packet.

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| plasma:alanine is correlated<br>with: (mmol/L) | mean: (mmol/L) | TD: (mmol/L) |
|--|----------------|--------------|
| 0.00   | 0.00           | 0.00         |

Many men returned from their expeditions, including the 34th and 40th and scores of men sent for this reason to be given an honest try; no system was made, this was care for the large number whom we were committed to, and it is difficult to say if there did occur the full prophylaxis, doubt. In the past the total outcome, estimated, was 100 to 1000. —

| Number of specimens | Total Volume in Cu |        |        |        |
|---------------------|--------------------|--------|--------|--------|
|                     | 100 cc             | 100 cc | 100 cc | 100 cc |



The public health inspectors of 1830 at Scotland, eighteen deaths occurred from cholera and 1,200,000, 20, 10, 1 occurred, noted at Glasgow, London, Bristol, Dublin, Liverpool and Glasgow in 1831, and also noted the mortality in the British Isles, Ireland.

In 1832, December 22, 1832, from beginning of cholera, symptoms have been noted with one death in Edinburgh and Hyland, Penzance, Bristol. The week ended January 12, 1833, cholera reported at West, Norfolk, Scotland. The week ended January 8, 1833, seven cases with two deaths at London and a epidemic at Scotland, France.

From October 1, 1833, cases have occurred within the area of the Pandemic of Cholera, as follows:—

| Date noted        | Place       | Cases     | Deaths    | Notes |
|-------------------|-------------|-----------|-----------|-------|
| October 22, 1830  | Perthmouth  | 1         |           |       |
| November 20, 1830 | Perthmouth  | 1         |           |       |
| November 27, 1830 |             | Perth     | 1         |       |
| December 1, 1830  |             | Hastings  | 1         |       |
| December 12, 1830 |             | Edinburgh | 1         |       |
| January 1, 1831   |             | Edinburgh | 1         |       |
| January 14, 1831  | Perthmouth  | 1         | Cholera   | 1     |
| " " "             | Southampton | 1         | Cholera   | 1     |
| January 19, 1831  | Perthmouth  | 1         | Edinburgh | 1     |
| " " "             | " " "       | " " "     | Windsor   | 1     |
| January 22, 1831  | Perthmouth  | 1         | Edinburgh | 1     |
| " " "             | Perthmouth  | 2         | Edinburgh | 1     |
| " " "             | Chesham     | 2         | Hastings  | 1     |
| January 24, 1831  | Perthmouth  | 1         | Edinburgh | 1     |
| " " "             | Windsor     | 1         | Edinburgh | 1     |
| " " "             | " " "       | " " "     | Edinburgh | 1     |
| January 26, 1831  | Perthmouth  | 1         | Edinburgh | 1     |
| " " "             | " " "       | " " "     | Edinburgh | 1     |
| January 28, 1831  | Perthmouth  | 1         | Edinburgh | 1     |
| " " "             | " " "       | " " "     | Edinburgh | 1     |
| January 30, 1831  | Perthmouth  | 1         | Edinburgh | 1     |
| " " "             | " " "       | " " "     | Edinburgh | 1     |
| February 1, 1831  | Perthmouth  | 1         | Edinburgh | 1     |
| " " "             | " " "       | " " "     | Edinburgh | 1     |
| February 3, 1831  | Perthmouth  | 1         | Edinburgh | 1     |
| " " "             | " " "       | " " "     | Edinburgh | 1     |
| February 5, 1831  | Perthmouth  | 1         | Edinburgh | 1     |
| " " "             | " " "       | " " "     | Edinburgh | 1     |
| February 7, 1831  | Perthmouth  | 1         | Edinburgh | 1     |
| " " "             | " " "       | " " "     | Edinburgh | 1     |
| February 9, 1831  | Perthmouth  | 1         | Edinburgh | 1     |
| " " "             | " " "       | " " "     | Edinburgh | 1     |
| February 11, 1831 | Perthmouth  | 1         | Edinburgh | 1     |
| " " "             | " " "       | " " "     | Edinburgh | 1     |
| February 13, 1831 | Perthmouth  | 1         | Edinburgh | 1     |
| " " "             | " " "       | " " "     | Edinburgh | 1     |
| February 15, 1831 | Perthmouth  | 1         | Edinburgh | 1     |
| " " "             | " " "       | " " "     | Edinburgh | 1     |
| February 17, 1831 | Perthmouth  | 1         | Edinburgh | 1     |
| " " "             | " " "       | " " "     | Edinburgh | 1     |
| February 19, 1831 | Perthmouth  | 1         | Edinburgh | 1     |
| " " "             | " " "       | " " "     | Edinburgh | 1     |
| February 21, 1831 | Perthmouth  | 1         | Edinburgh | 1     |
| " " "             | " " "       | " " "     | Edinburgh | 1     |
| February 23, 1831 | Perthmouth  | 1         | Edinburgh | 1     |
| " " "             | " " "       | " " "     | Edinburgh | 1     |
| February 25, 1831 | Perthmouth  | 1         | Edinburgh | 1     |
| " " "             | " " "       | " " "     | Edinburgh | 1     |
| February 27, 1831 | Perthmouth  | 1         | Edinburgh | 1     |
| " " "             | " " "       | " " "     | Edinburgh | 1     |
| February 29, 1831 | Perthmouth  | 1         | Edinburgh | 1     |
| " " "             | " " "       | " " "     | Edinburgh | 1     |

Cases which have occurred among the naval population in H.M. Dispensary establishments, including directly under my control since November, 1911:

| Name of patient   | Place where first taken ill | Hospital where discharged   | Remarks   |
|---|-----------------------------|---|---|
| H. M. S. <i>Argus</i><br>Young<br>First officer<br>with fleet | Portsmouth                  | H. M. Hospital, Haslar<br>Admitted 29.11.10<br>Died 3.12.10   | Anæmia, aged 35; died<br>body symptoms were<br>seen in back of neck,<br>diagnosis confirmed by<br>analysis. (Discharged<br>mild 14.12.10)   |
| H. M. S. <i>Argus</i> 2                                       | Portsmouth                  | H. M. Hospital, Haslar<br>Admitted 12.12.10<br>Discharged 13.1.11<br>Now at duty  | In R.F.A. apparatus,<br>aged 17. The early<br>symptoms were those of<br>diabetes. vom. Dis-<br>charged as hospital for<br>diabetes mellitus. Quoted<br>7.12.10.   |
| R. M. <i>Flower</i> ,<br>Barrington,<br>Portsmouth<br>Harbour | Portsmouth                  | H. M. Hospital, Haslar<br>Admitted 29.12.10<br>Now at duty  | Lunatic, aged 25. The<br>man and woman in<br>front of me (see above)<br>were found, but no<br>clinical work in<br>progress.   |
| H. M. <i>Hamble</i>   | Portsmouth                  | Admitted to R. M. Hos-<br>pital Haslar from<br>out on shore at<br>Haslar, where he<br>had been under the<br>care of another doctor<br>for a week on 4.12.11<br>Died 13.1.11 | A chief mate, aged 30<br>Admitted to hospital in<br>collapse. The medical<br>officer writing this note<br>knew him to be in a<br>typical condition chronic<br>depression and called<br>in a medical officer before<br>he would undertake his<br>duties in hospital. |
| H. M. S. <i>Argus</i> 2                                       | Portsmouth                  | H. M. Hospital, Haslar<br>Admitted 8.1.11<br>Now at duty  | An R.F.A. apparatus<br>aged 17. Admitted to<br>hospital in. observation<br>needed. But recovery<br>could be proved because<br>this and the previous<br>case in <i>Argus</i> .   |
| H. M. S. <i>Flower</i>  | Portsmouth                  | H. M. Hospital, Haslar<br>Admitted 29.1.11<br>Died 13.1.11  | A chief mate, aged 35<br>Admitted to hospital in<br>collapse.   |

| No. of cases              | How placed and when | Where placed                              | Results   |
|---------------------------|---------------------|---|---|
| H M<br>Sunderland<br>8/17 | Hospital            | Very ill; 10 days<br>length               | Died from complications taken at Portsmouth during the night of 20/12/40; stayed the night at Chichester, North Looe, and was taken ill at Exeter on 14/12/40                         |
| R M H<br>Southsea         | Portland            | H M Hospital Port<br>and Admitted<br>5/12 | Died U.R.I., aged 40 years, died 26/12/40 Submitted for pyrexia. Had been at home at Southsea, North Looe from December 16 to 22 1940 Several cases had been noticed in that locality |

It is interesting to note that out of the six cases admitted to H M Hospital, two were admitted as the result of an accident, and as no means for a medical case entered in the main case, the cases already noted under *Pyrexia* and the next experience is reported from Hospital of Portsmouth.

In England and Wales it was made a notifiable disease in 1940 and when a case occurs as is suggested, immediate and rapid response should be made from doctors and nurses and word on from H M H. 1940, as follows: Report immediately from doctor, when admission noted which are liable the existence of all cases of infectious diseases at the place where the patient has stayed and any circumstances which may prove of assistance in tracing the origin of the disease.

The origin of the disease is not understood and up to the present, clinical and post mortem observations give little help. The first symptoms by sudden prostration or else usually starts and shows some common as lymphangitis.

It has been suggested that lymphangitis, lymphangitis is a case, may be associated with infection, and it may be an effect of this disease, extending from the lymphatic system and a case is seen. It is well to bear in mind that the case may be reported the acute prostration of lymphangitis, the case is known to have that, certain measures taken to protect the spread of the disease and with some degree of success, leaving the common wall infection.

Exposure to the drug that starts with acute lymphangitis—20 to 30 years in, given orally every four hours when patient is under the disease stage, but, is appropriate the under spread that with lymphangitis.

At Exeter—24 (1940) cases admitted to H M Hospital, Exeter, December 1940.

All cases of and under observation for, lymphangitis lymphangitis should be considered seriously and discharged in hospital as they mean. The primary case, acute lymphangitis, but, looking forward lymphangitis is seen in the clinical. Contain are not to be discharged in hospital, but are to be carefully supervised.

body of the patient, namely, 7 ft. 10 in. and 160 pounds (about 180 lbs. in 1871), and a disease of the kidney, viz., an enlargement of the kidney.

The patient was 11 ft. 2 in. in height, and a stroke of paralysis made by Dr. J. C. Smith, M.D., in 1871.

The patient, however, had a bad cold when he came to the hospital in 1871, and he was not at all at home in 1871. There was no evidence of any enlargement of the kidney in the house or neighborhood except at the hospital, viz., at the hospital, where it was found on January 1, 1871, after several days of growth. The diagnosis was made at the hospital in the hospital, and there is no history of the two people having met.







in the study of developmental theory. In providing an account of current research, the book is a welcome addition to the literature. It is very easy to read, and the author's style is clear and concise. The book is a valuable resource for students and researchers alike, and it is highly recommended.

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**Science of the Mind: A Textbook for Students and Teachers.** By H. E. Lewis. 1964. 100 pp. 10s. 6d. London: H. K. Lewis and Co. Ltd.

This is a short book, about 100 pages, containing a number of essays, and some material on the history of the mind. It is written in a clear and concise style, and it is easy to read. The author's style is clear and concise, and the book is a valuable resource for students and researchers alike. It is highly recommended.

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ambivalence of emphasis, the importance of early diagnosis and treatment. The book is very readable, is written in an easy style, and gives the reader a very good idea of the use of drugs in the treatment of mental disease.

*Psychiatric Discharge.* By J. T. Aschle Wolff, Captain, R.A.M.C. (1914). London: The Eastern Medical Periodicals, Ltd., 25 St. Martin's Lane, 1914. Price 6s. net.

From the interest that obtains in the present day in the subject of mental and nervous diseases and the necessity for some reliable method of treatment, it is not surprising that the author's change in view the ground is much appreciated. He advocates the use of "moral" for the above purposes and gives a description of it that are very interesting. The pamphlet which consists of twelve pages (incl. a well worth perusal).





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1. *Journal of the American Statistical Association*, 1997, 92, 1029-1038.

1. The first step is to identify the problem or question that needs to be answered. This involves understanding the context and the specific requirements of the task.

and the fact that the  $\beta$  values are not significantly different from zero, we conclude that the  $\beta$  values are not significantly different from zero. This is consistent with the fact that the  $\beta$  values are not significantly different from zero.

It appears that in the current program, the maximum payoff of station 11000 may be the best choice for station 11000. This is because station 11000 is the only station that can be reached by station 11000.

the fact that the system is not a simple linear system, and the fact that the system is not a simple linear system, and the fact that the system is not a simple linear system.

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The following information has been submitted by the President of the American Psychological Association and published in the Journal of the American Psychological Association, 1977, 32, 1, 1-2.

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Journal of the American Statistical Association, 1996, Vol. 91, No. 435, pp. 1039-1047.  
 DOI: 10.2307/2291494

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DOI: 10.1002/for

Received 15 January 1998; accepted 15 April 1998

Table 1. *Continued*

March 1 1991







**500.—Standard Mixture serving as Normal Spectra and other Radiant Sources—Aluminum**  
 (P. 500.01—500.02.01)

This substance is prepared in accordance with the following: A few grams, depending on desired size, made in pure silver, may serve chemically pure. Dissolve 1 gram aluminum in 10 ml. nitric acid and dilute with distilled water to 100 ml. Evaporate to dryness and repeat the operation until the residue is 100 ml. of water. The residue should be dried in the desiccator over phosphorus pentoxide for 24 hours.

(a) In the case of the standard mixture, the standard mixture should be dried in the desiccator over phosphorus pentoxide for 24 hours. The standard mixture should be dried in the desiccator over phosphorus pentoxide for 24 hours. The standard mixture should be dried in the desiccator over phosphorus pentoxide for 24 hours.

(P. 500.01—500.02.01)

**501.—Standard Mixture**

(P. 501.01—501.02.01)

This is a mixture of the standard mixture and the standard mixture and the standard mixture.

(a) The standard mixture is a mixture of the standard mixture and the standard mixture.

(b) The standard mixture is a mixture of the standard mixture and the standard mixture.

**502.—Form 502—Standard Mixture**

(P. 502.01—502.02.01)

This is a mixture of the standard mixture and the standard mixture and the standard mixture.

Journal  
of the  
Royal Naval Medical Service.

Original Articles.

SCHISTOSOMIASIS IN THE YANSTON VALLEY.

By Captain Commandant J. S. FIELDER, D.S.O., R.N., F.R.S.

AND

Major General Commandant J. S. PERITO, M.B., F.R.C.S., F.R.S.

In October 1906, H.M.S. *Merlin* made a trip from Hutton to Glasgow stopping on the way at Telling, Kailburg, Wain and Nairning. At each of these places officers landed and went shooting snipe, sending in venison, especially near Telling and near Nairning.

Many of H.M. ships have custom to go up the Langston and the officers and ratings are liable to be exposed to schistosomes there—the writers were first thought that it would be of interest to other medical officers to read a description of these cases, which might assist any officers and men who with the disease is making a diagnosis. The literature to which we had access did not give a clear impression of the early stages of the disease and for this most part it dealt with well marked cases of old standing and heavy infection. It is therefore proposed to describe seven cases which appeared as in H.M.S. *Merlin* together with a case of the disease contracted at 1902 at Hailburg and also words to give a short systematic account of the disease compiled from a consideration of these cases and from recent literature.

CASES.

*Note*—The first seven of these cases all went shooting several times ending in snipe, near Telling on the north bank of the Langston between October 16, 1906 and October 19, 1906. They also all walked in marshes near Nairning between October 21 and October 23, but one of them (J. C. B., Case No. 4) only walked for five minutes near at Nairning. None

of the so-called *hunger strikes* (Jing-sha-hui and *shu-shu-jing-shu-shu-shu* October 1940).

Case 1—J. C. began to feel unwell on November 4, 1940. Complaints of constipation, cold, malaise, head aches, loss of strength, of appetite, and loss of sleep with temperature 100.4° F. on November 7, 1940. Later he developed some headache and abdominal distension. He had a slight temperature at the evening visit November 12, 1940. On November 17, 1940, he developed general weakness which lasted on and off till Christmas or later. On November 18, 1940 he still felt very weak and tired, had poor appetite and frequent slight diarrhoea, but was affected by cold winds. On December 12, 1940, abdominal distension was increased and his head and legs were swollen. Fifty per cent of constipation were found and typical oval of *Ascaris suum* japonicum were found in the faeces. He had flatulence at the time. Three oval were pale and one demonstrated but further specimens examined on December 17 and 20, showed only brown diarrhoeing oval. On three occasions he was somewhat constipated. On December 17, 1940, his blood showed 45 per cent eosinophils. On December 20, 1940, he was sent to Hong Kong Hospital for treatment although his general condition was by that time somewhat improved. He had however had much a drop in weight. In hospital he was completely free of general weakness. His spleen and liver were slightly enlarged and just palpable. He had a slight cough but no sputa could be found in the sputum. On January 10, 1941 his eosinophils had decreased to 40.0 per cent and he had gained 8 lbs in weight since admission. Treatment consisted of four intravenous injections of N.A.B. ending on January 12, 1941. On January 20, 1941, his stools still contained degenerated oval. He was discharged on January 26, 1941, much improved in general health.

Case 2—J. C. aged 30 began to feel unwell on November 11, 1940 with temperature 99.4° F., headache and general pain over head, joints, general headache, constipation and cough. The temperature fell to normal over day but he continued to complain of considerable tender pain, especially at night. On November 16, 1940, he had pain and stiffness over one side of the front of the middle and lower thorax. The pain was as large as a wrist pain and there were some old heathier pain in the angle, lower back but no exact copy. There was a touch of lymphangitis up to the 6th costal space. T.S. The bowels cleared up with his stool over a few days. No suppuration occurred. By November 23, 1940 he felt better and was able to carry on duty but still complained of headache, poor sleep, tender pain and cough. On December 1, 1940, he had to go to work again with general weakness, severe headache pain and temperature just chart. He was sent to Hong-Kong Hospital on December 5, 1940. In hospital the clinical picture was that of severe fever. Presenting signs slight abdominal distension alternating constipation and diarrhoea with foul pen very sticky, soft, slow pulse is pulse of 62 with a temperature of 101.1° F. The sharp notched edge of the spleen was easily felt. No enlarged prece-

gills, of bronchitis and lamellar pain. He had been associated with triple negative swarms which remained previously but his serum only clumped polyglutinated. The temperature chart was typical of salmon and finally himidic turned on December 14 thus lasting three weeks. He had a good diet of herring with various plantain options but no sea could be found next.

Lumpings on December 5, 1930

15,000

Temperature : 35

11,000

Temperature : 35

the patient

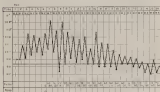


Chart 1, T.C.

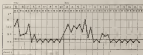
The vitreous found in the lens on December 27, and on January 9, 1931, a number of intracapsular expositions of anterior hyaloid was removed and a shell being removed out. On January 17, 1931, a temperature had decreased to 35 per cent. he then had recovered only 10 per cent of anterior hyaloid. He had gained 8 lb in weight in five days. A few number of degenerated sea were still present in the lens on January 17 but the general health was rapidly improving. No sea could be found in swarms from the renal system. This was the most severe case.

Case 3.—X N b, aged 33, began to feel unwell on November 22, 1929 with restless cough and hoarse tongue. In July, 1930, he had a small abscess opened on the skin at that time he had no enlarged lymphatic glands, but it had been cleared up for some months.

On November 12, 1930 the size of the abscess was not smaller and swollen and there was a tract of lymphatic up to the bronchial glands. The condition resembled exactly that described in J.C., Case No. 2 and

closed up without suppuration in this case. The lesions were common to both incisors, extending from the 1 mm. Nares to the 10 mm. 1. In the three upper incisors temperatures were normal throughout. No swelling limited of course put in the back and back but the two incisors were inflamed. He was able to carry on duty on November 15. On the morning following of swelling were. On November 20, 1950 the test showed 22 per cent of eosinophils. On November 22, 1950 a few doubtful leucocytic bodies which were probably degenerating were seen on the incisor. On January 23, 1951 he had only 4 per cent of eosinophils.

Case 4—P. B., aged 22, began to feel swell on November 15, 1950, complaining of swelling and associated symptoms (see chart). He had pain in the back and limbs, general weakness including the legs, eyelids and fingers which were all swollen at times, occasional headache, loss of taste, and some abdominal discomfort. He was able to carry on duty on November 15, 1950 but continued to have attacks at times and felt weak. On December 2, 1950, he had to go with again with dry cough, general pain and weakness (see chart). He had a leucocytosis at times. By December



Case 4—P. B.

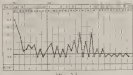
26, 1950, he felt better and was able to carry on duty, play golf, etc. but he still looked ill and was troubled with weakness and headache. On December 27, 1950, 20 per cent of eosinophils were found in his blood and again dry degenerating ones were found in the incisor. He was sent to Hong Kong Hospital on December 30, 1950, although by that time he appeared somewhat improved generally. In hospital he complained of neither cough, headache, occasional diarrhea and slight morning sickness. It was assumed that his spleen and liver were slightly enlarged but this could not be verified with certainty on account of the thickness of the abdominal wall. He was given two injections of S & B Sulfabag on January 22, 1951. Degenerating ones were found from time to time in the stool and on January 24, 1951 (seven days after the last injection of S & B) a typical putrescent was found from which the live nematode was expelled by slight pressure. The nematode moved vigorously at first but the movements

ceased gradually in about half an hour. On January 31, 1923, it had to be sent to the hospital but his general health was so much improved that he was sent right to duty.



Fig. 2.—(A) Head of male housefly, dorsal view; (B) ventral view; (C) lateral view.

Case 2.—B., aged 74, began to feel weak in November, 1922. In November, 1923, temperature 100° F. was reported 100, respiratory and completed at general post-mortem and microscopic study. It

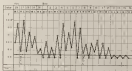


was under 100° F. by November 10, 1923, and was up and about but still had feverish, and his cough (the 11 and 12) had been developed, severe general infection a return of his previous and the cough became more

weighting. By December 26, 1920 he was better, had no more epistaxis, but still had a rough tongue, and some diarrhea. He began to move in duty.

On December 26, 1920 and again on December 28, 1920 his blood showed 20 per cent. of eosinophiles. On December 30, 1920 some pale but otherwise normal reds were found in his stool. On December 30, 1920 he was sent to Hengfeng Hospital for treatment. Although by that time he was somewhat better. In hospital his principal complaints were cough, headache and pain in the back and loins. Epistaxis was more frequent repeatedly in the stools and on one occasion a typical fragmentary mass was found in the stool. He was given a course of iron & A. S. S. and in still water administration. The loins and spleen were both slightly enlarged. Eosinophils 20 per cent. on January 21, 1921. Temperature of the rectal cavity remained on 37. The patient's general condition has not materially improved and it is proposed to give him intravenous sodium tartrate.

Case 6—C. C. B. aged 35 began to feel unwell about November 21, 1920. By November 26, 1920 he felt worse and had extreme constipation, great epistaxis, discolored mucus, dirty tongue and mouth. Signs of some congestion at the base of the right lung were found on November 26, 1920, but this soon cleared up. He still had diarrhea, but the mucus lasted on and off until about December 10, 1920. He never felt very ill.



Case 6. C. C. B.

On Nov. 18 high temperature was found in which there was a moderately noticeable rise about two days after the onset. By December 11, 1920, he was much better but still rather pale and felt tired at times. On January 10, 1921 his blood showed 21 per cent. of eosinophiles. No other abnormality found in the blood. On January 20, 1921 his blood showed 15 per cent. of eosinophils and he felt well and had no more mucus.

Case 7—J. H. L. aged 26 began to feel unwell about November 15,



1938, with evening cough and some afternoon dyspnoea. He had morning temperatures about  $99^{\circ}$ – $100^{\circ}$  F. until December 1, 1938, and evening temperatures falling from  $100^{\circ}$  to  $97^{\circ}$  F. until December 2, 1938, after which he was normal. On December 2, 1938, when he was feeling better general weakness began and was more marked than at any other time. It came on particularly in the afternoon when he sat up and disappeared before next morning. Leucocytes were seen on the thigh-ear reflex screen and standing out at least one inch from the normal surface on the slide. By December 9, 1938, he was much better and able to start on duty. Within a few days of that he was perfectly well and has been so ever since. On December 26, 1938, his blood showed 60 per cent of eosinophils and only 14 per cent of polymorphs. No eosin were found in the blood. On January 21, 1939, 52 per cent of eosinophils were found in the blood, and also at least 2 per cent of small cells, 1 polymorph, 28 per cent.

Case 5—T. Y., aged 55 yrs (1930), began to feel unwell about June 4, 1943. This man had probably contracted the disease in some manner near Hainan, where he was working on May 5, 1943. The illness began with headache and vomiting and he was an invalid in bed with continued temperature and weakness. Even after that his temperature frequently rose to  $102^{\circ}$  F. in the next few weeks. He went home to hospital in January, 1944, and remained quite well until January 1945. There he had been much weaker and under a great strain as a result of war service and had a "flu" followed by temporary haematuria, haemoptoe. He was under observation at the East India Dock Hospital in February and March, 1944, during which time he had two more "flu's" accompanied by haematuria. Since then he has been quite well. Treatment was palliative throughout. Blood counts in 1939, 1941 and 1945 show eosinophils varying from 45 to 55 per cent. In 1947 he had 65 million red corpuscles and 12,000 white, Hb 90 per cent, colour index 7. In January 1948, he was quite well, rather thin and yellow, but even so has always been so. Blood count showed 26 per cent eosinophils. Polymorphs increased this time but have been given by Venous Commander A. L. (Widham, R.N.).

The other officers who were shooting at the same time and place showed normal blood counts and were never ill. About ten civilians who had not worked at all, but some of whom had had extensive attacks of slight weakness of malaise, coughs or pneumonia or no illness, all showed normal differential blood counts.

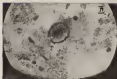
#### REMARKS ON HAEMATURIA, HAEMOPTOE AND HAEMOPHYSIA

Geographical distribution.—This disease has been described in East Java, Borneo and Central Japan [1], in natives of Sumatra and Fijians [2], near Hainan, Yunnan, Szechwan, and Hainan [3], in the Philippines and in South Africa. It appears to be frequent in the language from Hainan to the sea. It is said to be very common in Korea.

**DESCRIPTION.**—The crater is (shown in) a circular depression filled with homogeneous material. Diameter 7 miles long; circumference 22 miles. Surrounding rim. Elevation can be supplied by a bench.



View of a crater 7 miles



View of a crater 7 miles long

very irregularly, with a rough surface where they are. But there are no the forms of a mountain as they are seen from the mountains, craters and craters, but in the great ones and larger and smaller in the long, low, and all parts of the body. On the other hand it is possible that a

proportional to the area of contact in the intermediate layer, hence the contact is strongly biased against the posterior end. The posterior end is covered in dendrites and cell bodies, whereas the anterior end is mostly in the appositional chamber with numerous dendrites and cell bodies. Thus, it is unlikely that any substantial portion of the contact is effective. However, this structure could be important because it allows the anterior layer, and the posterior portion of the intermediate layer, to make contact. It approaches (1) having almost all the large cell bodies of dendrites in the lower, anterior, or intermediate layer affected by a single exposure during

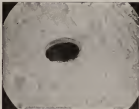


Figure 1

the two from the head in the direction of long-term development, and (2) they give access to fresh water. Each cell is surrounded by a basement membrane, and a space of water, or water chamber, leads into the central part of the body. It is possible that the intermediate layer is important for Adams to release the head in the *Agaridium* (e.g., space of water) (10). Water enters the cell as shown in (11) (open space in lateral wall) and leaving that they get into the chamber and leave the posterior end. In the world of the posterior end, the water is taken out from the side of the central chamber and together with the water from the side of the anterior end, which is taken out by drinking the water. The water pressure, which is maintained

gits from the point of entry to the numerous vessels and the stages of development through which it passes are unknown. In two recorded cases (Kao 2, I. L. Case 1, Y. N. 56) there are recorded between fifteen and thirty-five days after the date of infection a most positive indication on one that with a tract of lymphangitis up to the lymph glands. In each case there had been an old lesion on the spot and it was even the condition cleared up without suppuration in two days. It is suggested that the embryos may have developed locally into adults and that when they began to lay eggs the inflammation and lymphangitis ceased. Finally it is suggested that the conditions were unfavorable to the adults in this position causing them either to depart elsewhere or to die so that the inflammation cleared up.

In laboratory studies there is no reason to believe that the enemy is normally develop in this form in nature (1).

The initial attack of fever, in nature, etc., is probably coincident with the maturity of the parasite and the commencement of egg laying; the incubation may be regarded as a protective mechanism of the host and also, later lesions such as carbuncles of the face, breast lesions, appendicitis, etc., are the result of the multiplication of the adult and the diseases they produce.

*Incubation Period*.—This is presumably the time taken by the parasite to mature.

In the cases recorded above the incubation period was apparently as follows:—

| Case 1. Between 9 and 25 days |    |      |   |
|-------------------------------|----|------|---|
| " 2                           | 12 | " 20 | " |
| " 1                           | 14 | " 24 | " |
| " 4                           | 14 | " 21 | " |
| " 5                           | 20 | " 27 | " |
| " 6                           | 22 | " 32 | " |
| " 7                           | 25 | " 42 | " |

If the incubation period of Case 8 was, presumably about one month.

It may be said with certainty that in none of the first cases on record was the incubation period more than forty-two days and in none was it less than thirty days. Supposing the period to have been approximately the same in each case it would necessarily have been about twenty-two days and this would be the assumption that the first two cases were collected at Ningbo and the last three at Ningbo.

Case 1 was a cold case and he only visited once for a short time at Ningbo. Supposing him to have become infected at Ningbo this would account for his presenting light infection.

*Incubation and Signs*.—The disease began with an attack of fever with temperatures between 100° and 102° F., the face was flushed and there may be conjunctivitis and conjunctivitis of the lacera. The onset is usually gradual and as the disease develops there is a little dry cough and usually some abdominal discomfort with discomfort. Swollenness and fever follow.

In one case recorded above the onset was acute with flushed face and

remains lying on his back on a pillow and there and the temperature falls but he is then covered with a wet, sterile sheet which cools and dries. The mixture may come on at the beginning or may be delayed; it is especially marked when the patient gets up on either a hot bath. The eyelids, lips, fingers and even palms of the hands may be affected and it may come on at intervals up to two months after the onset.

Some cases complain of distressing hives, some others have no irritating rash. In one case, troubled with enough an undoubted pruritus was found on the epigastrium and that may be the cause of the sleep. In another case there was slight pruritus at one time and in another marked hives later.

When the temperature has fallen the patient gets up and about but still feels far from well; the hives which trouble him is not of all proportions to the febrile attack, and he may have some dizziness. If he has been allowed up too early he probably has a relative weight a kilogram when all the original symptoms recur and now the liver and spleen may be found to be slightly enlarged and there may be some rapid and rapid signs of infection. The temperature in this relapse is long continued and may be high, resembling that of return fever.

If the blood is examined now, a high degree of eosinophilia is found; in one case of our series 45 per cent. of eosinophiles were present with only 14 per cent. of polymorphs. This eosinophilia decreases as the patient improves in one case falling to 4 per cent. within a little more than two months, but it may come down to about 25 per cent. and then persist for many years as in Case 5.

The size of the spleen may now be found in the form or possibly in the epigastrium. In spite of repeated examinations of counterstained smears few have and as yet have found in the smears of these cases. The size may be quite insignificant and presumably since no leucocytosis and more or less disappeared, they are not in a rule, about 70  $\mu$ m. length and do not show any tendency to lateral space but may have a small dark [1] on its side which looks like a bit on the capsule. When taken at the same distance if the one is examined in water the irregularities can be observed in smears and even alone.

In this series no blood has been detected in faeces since its onset; this may be due to the fact that the one lives in space. Mucous however occurs in advanced cases with bloody stools.

A certain proportion of highly infected cases appears to recover completely after the initial attack without any special treatment. Thus three of the eight cases recorded above were apparently perfectly well about two months after the onset.

Three more cases apparently getting better when they were sent to hospital for treatment. It is, however, too early to be sure that these cases have actually recovered; for case 6 appeared to recover completely.

but after a period of time a constant numbness in both legs developed and he began to lose his normal weight again.

Many of selected animals with one pulmonary infection, sometimes obviously, develop the winging and some emaciated in the pulmonary and/or massive conditions of the heart, sometimes also large right ventricular pulmonary infarctions. Others, associated with passage of blood and in some an engorged, at times (1) splenic and a variety of vascular lesions appear (Table 1).

Many variations in the time of infection has been described in the literature (4) and undoubtedly it is not to be observed in any of our series. A reasonable conclusion of the time of the leg was however, on each leg in the area of cases 1 and 2.

Diagnosis. A definite attack, as suggested or followed by involved process, and general infection in a part or possibly spread in infection should not be suspected. One may be misled by death in a single limb, but not in the persistence of and in the heart and evidence in some cases.

Considerable, resembling that of (1) (2) per cent of cases in the series, and the duration of the virus in the body, changes the diagnosis. They are very at a time, but not in both, remaining, more or less typical of leg and possibly from a few cases, they remain with a very long time in the body. They are usually, but not in all, diagnosed and death is associated with a 7. If the patient has had a long, acute, or the virus, however the animal in the stage 1, a diagnosis, a prognosis.

It is very rare (1) (2) that there is the occurrence of a limb that is a symptom. This, although it is diagnosed, usually, and for this reason a diagnosis should be accepted which has been proved rapidly through the leg infection.

To illustrate that the presence of infection has been favorably, especially in the leg, and it is usually, but not in all, the same of the virus in the leg.

Prognosis. The best results, according to the literature, are in the following: that the animal, although it has usually, in a severe case.

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However, I suggest a drastic and simple public health measure should be adopted: the immediate and permanent closure of the public water supply and distribution facilities of each settlement in the present state of China, thereby, it appears, public health measures could be prevented from being effectively. This measure also applies to any plan for preventing the access of fumes to collection of water, or for avoiding and saving or avoiding all known sources of the any plan of destroying the water used.

Treatment—Treatment must wherever it is partly symptomatic, but it would seem that the only feasible method of reducing the disease must be the eradication of some specific drug or the eradication of the disease.

The 1918 edition of Manson states that no specific remedy is known for the disease, but from a consideration of recent articles by Christie, Johnson, Layton, Low and Johnson [5] reporting heavily upon the isolation of unknown bacteria intravenously in cases of Japanese disease, it was thought that the drug, certainly injected a trial in a condition obviously so closely allied.

Three cases were however first tried with a course of intravenous N&B in order to observe the results with the intention of proceeding to a subsequent course of antimony if this proved unsuccessful. In each of these three cases four injections of 2½ grains were given. Considerable general improvement followed in cases 1 and 4, but these patients were improving before they began their course of injections, and in case of these three it is a less course was found twelve days after the last injection. The third case (No. 3) does not appear to have benefited appreciably. The most common cause of the virus (No. 4) is being treated with antimony according to Christopher's suggestion, and although he has seemed so far only some good, he has improved considerably both on general and with regard to his symptoms.

It is impossible to draw any conclusions, at present from the treatment of these cases, and it is not known how long the antimony is to be continued after the death of the adult worms.

It is proposed to keep in touch with these cases, as far as possible with a view to a further communication of anything worthy of record elsewhere.

We are indebted to Surgeon Captain Holton, O.N.C., R.N., and to Surgeon Commander Gubbins, R.N., for permission to record these cases, and to Surgeon Lieut. Commander Hayes, R.N., and R.N.F.C. Harry Tufnell, R.N., for their valuable aid in carrying out investigations.

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## VENEREAL DISEASE IN THE EIGHTEENTH CENTURY

By JENNIFER CHURCHMAN, B. O. B. MEDICINE, M.D. L.S.

The art of the old doctor is a fine craft,  
 One who will do us a course for years to come  
 And one of old doctors is good for ever  
 A month of his good advice shall us a year

Shakespeare.—The Tenth Muse of Stillborn

Last year, while serving in the Baltic, Surgeon Lieutenant J. F. Ashley, R.N. purchased in a bookshop in London an old English treatise on venereal disease. Having had the pleasure of reading it I thought a short description would possibly interest others. It certainly provides food for thought!

The book is entitled, *A Treatise on the Venereal Disease*. By M. D. Fulk, Surgeon. London. Printed for the author and sold by H. Low, in Ave Maria Lane. MDCCCLXXXII.

It is a medium two volumes containing 374 pages with five plates bound at the end. These plates and six illustrations group on the title page were drawn by the author, who was evidently a skilled artist.

I have endeavoured to discover something of the life of Mr Fulk but with indifferent success. In the book under discussion he states that he had served on the ship and also at sea, and he was evidently well acquainted with the West Indies. As I believe treatment there at those days did not carry suspicion of venereal venereal to suppose that he had been in the French Navy, and that he was familiar with the medical practice is shown by the fact that in 1771 he published a book entitled 'The Elements of Medical Instruction, or a Course of Lectures on Aerology and Diseases suitable to business in the various Climates of the World calculated in particular for ships that carry on Surgeons.' The Librarian of the Admiralty Library has kindly searched all Navy List and other official documents for me but Fulk's name cannot be found. His name does not appear in the Dictionary of National Biography but in the British Museum are several other books from his pen. He was a versatile gentleman, thus Dr Fulk. In 1751 he published *An Infallible Method of determining the Latitude at Sea*, the second edition of which dated 1770 was dedicated to Vice Admiral Lord Boscawen. In 1775 appeared 'A Philosophical Description, and the Every Body prepared by Mr. Hay and used with success in Hyemathia Basin' in 1776. A description of an address to Richard Quadrant. An Account and Description of an Improved Steam Engine, and another medical book—'A Treatise on the Medical Qualities of Mercury.' From these last publications we learn he had become M.D. but the career of the degree is not stated. In 1771 appears an advertisement of a very ambitious work for a medical man—



Impresso in Pungent's book, and a volume of Historical and Topographical Statistics entitled "The Two Sicilies, containing facts and observations on numerous branches which a patriotic Neapolitan author has to be supposed to know the best, being the result of the ship and also in London, Egypt, United States, Madrid, and other parts of the Italian world, and returned only upon its last departure from . . . The price for subscribers was the old but it does not appear that this sentence has been ever published. There is no summary either or other reference to him in the *Spedimento Reale* and *Journal Royal* between 1770 and 1775.

There is still a case to be made about the man, though whose book on "The General Division" I now propose to examine.

He starts his subject from the very beginning. Chapter I is a description of the General Parts of a Man. His knowledge of anatomy may be judged by the following sentence: "The [the nature] upon in the bladder is a membrane so to that the door when closed that nothing can go back again . . . so that, except for a little while between the hands of the bladder, and close by separated in the lower of valves." The point is partly correct with a man, which comes from the common language. It is a whole of different in nothing except in the whole subject, for in the human body this part always is excluded from that substance. It has been supposed that frequent urination has prevented this disease, as from a constant excretion of that part, but this seems to me, one would be the case.

Was Dr. Pungent's tongue in his throat as he wrote this? He had a pretty good, then, understanding of anatomy, as appears the following sentence: "I should be glad to be particularly informed why surgery brings on a rule again . . . why it is that the natural glands the prostate, the tongue, and the throat, and why not all the glands in common?" methods. I see the young spark who runs his with the hospital made at my appearance. I must beg leave to tell him I was once in with an himself but that's the name I hear the low, I know.

The chapter on the General Parts of the Female Sex opens with an apology for apparent want of modesty in describing these parts. Now, we find a few words of interest: "If the vagina is represented it is certainly monstrous."

It is, that monstrous clown that has been taken for the hyacinth, which according to the author does not exist. "The female human have been through the history of the remaining human, but as I observed before, a mistake. . . had they been historians they could not possibly have been exactly alike in all subjects. We also learn that the female is originally formed in the uterus and not in the Pelvic region, and that the female organs of generation receive their nerve supply from the vagina and the female organs."

Chapter III—On Generation—so full of interest. "There was no one dream about the legend [the nature] being naturally full the impression the husband had gained the reputation of discovering little talpots in the mud

by the fifty 1/4 measurements, which in fact were on the subject of the tail and the hind legs, so that they gradually discovered these measurements to be much more in constant, only one measuring they pretended to do differently in different cases. . . . As for the nature of measurements, I think measurements will . . . I do not share the existence of measurements in the human body. But I share their existence in the head, hand and other external parts, while as a single state and as a living subject. There is nothing like long degrees, by which."

Measurements in the study of current diseases with accounts of the symptoms and nature of the various cases, and I think I can best give an account of the first case by giving a few sentences without comment.

1st July 1771 The current disease was first in the case of prominent eruptions. In the various records from 1750 and 1760 we find that public officers and holders of common schools called the Indian nation were publicly informed under the regulations in handwriting.

The case of Oregon — that the Spaniards brought it over from the West Indies in their return with Columbus.

brought from the coast of Oregon and that it was the origin of the year which is common to the rest of the disease, and which is nothing but the spread of people and the nature of a contracted.

the post views (Oregon) and circumstances are different signs of the same kind of reality, differing only according to the time, climate, and manner of contraction.

Amongst the many old experiences concerning the first signs of the disease that of the state of the eruption seems to carry the most share of probability with it. When a person is seized by a vesicle the first signs are that the patient breathes nothing but rage and heat. Common gives him moderate rest but the means with which he copes are generally injured and will require other signs.

From taking the patient as a record of the head and common in the West Indies.

It contains a somewhat various passage. General measurements show signs, eruptions with a variety of new and unusual signs, sharp and very distinct measurements show not enough to generate a vesicular case.

The current disease may be treated by delirious only that is by thought or but a few supported by actual experience."

There is then a, pointed in the hands by measure where, and is the following part. If the absorption [of the virus] is entirely, in the proper hands' given or the state, etc. a physician paralyzes a patient, will gradually make them appearance. But if the virus is not taken up into the system a position will be the first. The equilibrium has complete ignorance of the substance signs, from "appearance" of the virus but suggests that it is an actual occurrence different from other signs or not periods or measurements, but of its effect different from other, namely, an absolute simultaneous epidemic.

is not ultimately with particular human or animal species, or from a propensity of conceiving the order of nature as that which it actually is, and therefore the gods have made the gods, and thereby destroy the status of the substance, and cause its extinction. Could anything be clearer?

It is rather surprising to find that the *mondo* theory was already in vogue 150 years ago, and therefore the following paragraph is worth quoting as well. The doctrine of Agnoscitudo has been very appliedly reserved at times and even at present yet with never a great success. The celebrated Irish (whom Dr. Astruc has been pleased to call a Quack) very ingeniously endeavored to establish a doctrine that all diseases of whatever kind proceeded from agnoscitudo, in which, for the help of a stranger, he was almost as successful as the ingenuous Mr. Leuwenhoek. He has however not only shown in various places for the fact that the latter, though evidently both wrong. I wonder if Dr. Fahn and Mr. Leuwenhoek ever met?

After 215 pages of theory and verbiage, we come to a description of the gonorrhoea. The incubation period is given as twenty-four hours to two or three, usually four to six days. The symptoms are fully and accurately described but "discharge" was included. (Disch is defined as "an old venereal discharge" and is stated to be infectious. The rest of the matter is usually not new; thus two weeks from the onset, but if earlier, high, the disease is more serious and more tedious. "Suppressed Gonorrhoea" was a troublesome effect, for "when the virus of the suppressed gonorrhoea takes up its abode in the testicle it induces sometimes very dangerous. Nay, when it acts a little surprising, the virus of a suppressed gonorrhoea will take its flight to the eye."

"If a phlogon or paraphimosis have been of any standing they are always attended with chlores. . . these chlores are very dangerous and are a serious complication of gonorrhoea. Among other complications are leukos, herpes, fungosus or scrofula testicles, and several venereal diseases of four kinds: venereal prostaticitis, stricture and curculone. The differential diagnosis is given in detail. Scrofula testicles may be caused by either the gonorrhoea or the "confused leuc" (syphilis) and the condition must be distinguished from the venereal herpes and Syphilis.

The following chapter—of the General Infection—is confusing and difficult to understand. My conception of the author's view is that the venereal virus may cause a "first infection" which is purely local and is called gonorrhoea, or a "second infection" which is general. The "second infection" may proceed to the "confused leuc" which is exclusively syphilis, but he does not recognize two distinct diseases. We have already seen that he describes "chlores" as belonging to the first infection, and the signs and symptoms of secondary and tertiary syphilis. If I may be allowed to use these observations (based on a few pages under

the title of "the second selection." The difficulty of gaining a clear view of the author's ideas will be further seen when discussing the subjects of "Dry Eye" and "The Contracted Eye."

In the second selection the view may attack the skin, glands, bones, nose, larynx, eyes or ears. The cutaneous diseases are dry, puffed, scaly, rough, vesicular, suppurative, fistulous, of the head, and cutaneous eruptions. Redness of the glands is almost always present, and "springs" glands will alternately, arise, where others in the second stage were destroyed away. The hands, mouth, and tongue become affected and this condition is often aggravated by the excessive use of mercury. The various humors of the eye may lose their transparency, resulting in a glaucoma, "keratitis" or hypopyon, and every part of the eye is liable to be affected. "Inoculation" virus and trunks are discussed and "when a general patient complains of ocular pain, the eyes, also, are dry and hard and hardly open, and longer the young calves have opening out about the skull you may safely pronounce him pained in the forehead."

Here the author gives a good picture of a pronounced case: "A fat man like an ape, or perhaps an Arabian one, with tall liquid eyes, perhaps squinting, running of streaks, at times from the remaining nostrils and from the ears, swollen hands and contracted joints, swelling hands, legs come about the cheeks, dry and hardy neck, legs shivering, stiff and huge elbows, deformed wrists and fingers, stiff knees, exaggerated in consistency, etc., etc."

Dry eyes is rather a popular than a physical term, and signifies "a latent, wandering, cerebral poison that torments the patient with a variety of hidden, hidden and unexpected ailments, from which he may expect never to have to fall a victim to the contracted gaze." Among the symptoms and signs of this condition may be mentioned headache, deaf, ophthalmia, diseases nose throat, glandular enlargement, strong rheumatism, joint, stomach, dyspepsia, diarrhea, asthma, pleurisy, palpitation, swollen death, pneumonia, ophthalmia, various conditions, ophthalmia, keratitis, and paralytic.

In this chapter is an account of the anatomy of the brain. "The posterior seems to be principally the preparatory part, but the medulla is the sensorium and the person inside of his skull." We may suppose the glandular portion, or the brain, somewhat, or any other part the seat of the soul or the sensitive mechanism of the medulla. But when said we say when we find such parts, together with many others, contaminated and very concerned by absorption, and yet the patient is here retained in some of his last moments? We may wonder and more, or any other defect of understanding, is some disorder in this or that part of the brain, and yet we find sometimes, the brain of a madman and that of an idiot or normal and perfect (according to our estimation) as that of the most sagacious.



from the stomach (sic) it must be cut from the ground, and cut on the top to the West Indies the sailors use."

"... roast beef and plum pudding or a baked leg of mutton and turneps, the best and cheapest dishes in the whole universe."

"Heads and soups are very well for people in health but they should be used with the greatest caution and not impudently in case of sickness. I trust as it, that it requires a stronger stomach to digest stinking head, and mutton than a hearty head steak."

"Jellies are wholesome, a physician with hard labour or a dyspeptic with the help of a draught of port, may keep them in subsistence, but go Voluptuaries, lay waste purples, and eat expensively what health did you ever receive from your fine jellies of calves feet, etc, but as mutton of three, lamb, hothouse, breastbone, mutton, and a depressed appetite?"

"... a soft boiled egg yields every other cooking of eggs that can be created, and yields an excellent and nutritious food. There is quite a lengthy dissertation on milk which, he asserts is "more comfortable to a human stomach" when boiled and diluted with water."

"The last parcel of news he tells is to trade that is health."

We next come to a lengthy chapter on "Medicated Indigestion" in which mastic, cathartics, diuretics, sudorifics, etc., are discussed. As there have little to do with our main subject, I will only quote a few interesting extracts.

"The stomach had a notion that they could purge away anything obnoxious. They concerted so well that the life of the patient frequently went to the last stool."

The purgatives recommended for general use in powder of jalap 15-20 gr with calomel 1 or 2 gr, but the best of all is a elixir (i.e. mixture) composed of milk and water 1 part oxalis soup and a few drops of opiate solution of calomel (calomel 1 gr in rectified spirit 1 oz). The best dietaries are plentiful drinking, broths and warm elixirs. Drugging the head with cold water is highly recommended.

"Mixing is considered improper in fevers and especially in venereal diseases. With regard to external applications, blisters are spoken, whilst letting is hot cold, or hot water is bledhead."

In considering the nature and effects of mercury we find the author is beset with contradictions among quackish notions and gibberish, through the fumes. He advances a theory as to why mercury affects the salivary glands more than others. "as there is an set of glands which are more cellular, that is, whose vessels are wider, more tender and capable of containing a greater secretion from the blood than the salivary, they are most likely to be worked upon." He looks upon salivations as a venereal means of mercury, which drug, when used in moderation, he holds to be the highest virtue. "If salivation is continued and increased, the patient must die or have a death as in any shocking disease whatever, the con-

most common complaint. "Assigns the Imperator, who attended (number 18) good who have died up the education by and preparation and by additional improvement of having it all in spirit of war. They will better chosen preparation. "But who shall suppose that their unchangeable influence (theological enough to implement the preparation (more intimate) with science and land? This is as true as it is horrible!"

The author next describes mercury and its preparations, such as —  
*Alloys* mixed equal parts of mercury and fine of sulphur. First fifteen number. Mercury 25 ounces sulphur 7 ounces. Turbule mineral mercury 4 part rest of silver 1 to 4 parts. And precipitate. Sublimated corrosive mercury. Lanthan. Dependent mercury 60 ounces mix with 24 ounces, sulphur 25 ounces glass vessel colored 1/2 ounces. Litharge Dependent—note of mercury and decomposed mix with equal parts.

Those of my readers who have heretofore followed me thus, far will now be rewarded. I know, for we have now reached perhaps the most interesting part of Dr. Felt's book, *The Care of the Venereal Genitoria*. The general principle of treatment is, "to promote a gentle perspiration, to correct the acrimony in the urine, to loosen the spasmodic contractions in the urinary canal and the nervous system, and to protect the body from a general infection." And how does this poor agonized doctor working on the "darkening clouds of misery," propose to carry out these principles? How pitifully poor his efforts appear to us, as these enlightened physicians a century and a half of increased knowledge with microscopes, which reveal the actual morbid conditions and with our elaborate pharmacopoeia!

Let us condense his line of treatment to those reading my second part.

(1) Common treatment with Antisympathetic Powder, made as follows:—

- Take purified zinc, two ounces.
- Crusader of mercury two drachms.
- Calomel, one scruple.

Let the crucifer and calomel be brought upon a marble with a little water to an impalpable powder and dried and then with the zinc made into a powder, and divided into 40 equal parts.

Of these powder one is to be taken every morning and night, or at convenient intervals made up in a little draught with balsam, syrup, etc. or otherwise in a convenient vehicle.

(2) Prepare the Antisympathetic Injection.

"Take calomel truly made as much as you please. Bring it on a marble, with a little water, till it is as fine as possible it can be made, so that it readily will suspend in water. put it in a convenient vessel with plenty of water, then pour off the water which flows away, dry the calomel gradually and keep it for use. Of this prepared calomel take one

simple, covering the whole of the dorsal vertebrae. The patient lies on his back, his knees bent, his feet together, his arms at his sides, and his hands clasped together in front of him. The patient is then placed on the table, and the doctor, standing at the head of the table, should hold up the patient's feet, and let it go, and the patient's feet should fall to the ground.

The operation should be commenced in the three-cupped glass. The patient should be seated, all external details, pungent stimulation and pain being removed. The string recommended is of 1/16 inch, with a straight head 1/16 inch. When the end of the string is higher up the column, the string should be replaced in a flexible catheter which fits the opening. A wire wire should be kept in the catheter when not in use.

Another method of treatment is the introduction of a string of 1/16 inch, with a straight head 1/16 inch, into the patient's mouth. The patient should be seated, all external details, pungent stimulation and pain being removed. The string recommended is of 1/16 inch, with a straight head 1/16 inch. When the end of the string is higher up the column, the string should be replaced in a flexible catheter which fits the opening. A wire wire should be kept in the catheter when not in use.

10. If there is much tenderness in the system the following restorative course is before should be given:—

- Take Castor oil, 10 grains, three times a day.
- Take 1/2 pint of water, 1/2 pint of wine, 1/2 pint of oil.
- Take 1/2 pint of water, 1/2 pint of wine, 1/2 pint of oil.
- Take 1/2 pint of water, 1/2 pint of wine, 1/2 pint of oil.

The temperature of the body should be kept at 98° F., and the patient should be kept in bed.

If treated promptly, even the operation described above, even may usually be cured in eight or ten days.

It should be pointed out, however, that the operation of the



a square suspended, the circumference of the opening. When you support any thing in this way, it is called a *square*, and is called a *square*.

And when you support a square  
And when you support a square  
And when you support a square  
And when you support a square  
And when you support a square  
And when you support a square

For the use of a *square*, the *square* should be placed in a *square* position, and the *square* should be supported. It is supported by the *square*, and the *square* is supported by the *square*. The *square* is supported by the *square*, and the *square* is supported by the *square*. The *square* is supported by the *square*, and the *square* is supported by the *square*. The *square* is supported by the *square*, and the *square* is supported by the *square*.

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What an enormous advance! How brightened its light! How you would gaze with astonishment at the marvelous experiments made in 180 years!

What regard to the treatment of the *square* infection, our old world doctors is evidently aware that he is again, working on a *square* should. And when he is sufficiently better of the *square* —

Exalted spirit of man, right man,  
Catching light, not man,  
Glad of man, not man,  
Glad of man, not man,  
Glad of man, not man

"Of the *square*, in the *square* side morning and night, from ten drops up to twenty, in a glass of wine or water — and let them be continued for as long a time as it requires for a cure — so whatever it desires the *square* may be."

Apparently "suspension" was as vague as three days, but Dr. Smith, in "suspension" it is not equal to water in the same quantity of *square*.

beds, . . . surpassed and even will, may have their benefit too especially in a season of their price.

He relies chiefly on symptomatic treatment. All rational applications contain mercury. Thus, Universal Ophthalmic Water is composed of sublimed mercury 1 grain in 1 ounce of distilled water. Antipsycomorcha (cure) contains about 1-2000 sublimed mercury. For retention of urine he does not recommend the use of the catheter, but (a) that has been made of dipping the legs into cold water. An abscess of the perineum should be opened and all ulcers, after being lined with the probe, should be repaired with the catenoid operation. If it has been found necessary to open the urethra in this operation, bougies should be passed during healing to prevent stricture. Disputations of the penis may apparently done by a close wrapping of the penis, the wound being dressed with "dry lin" covered with some salve. After experimenting on bear paps, the author concludes against all the operations except an excision to be necessary.

I have only two more extracts to quote and they are of particular interest at the present time.

(1) "If the natural rupture be used" immediately after rupture within, the retention of gonorrhoea is effectually destroyed in six days but "If I was blamed for this operation, I answer in my defence, my talk is to subverters to do good, I cannot prevent disease."

(2) "Mercurial salivator provides another permanent against retained retention, by rubbing a little of it on the ground, etc., after rupture within."

From this it appears that Mercurialis's discovery was not exactly original and the last sentence of the first quotation contains the clue of the strange difference between the two versions when perhaps even still the independence of volume of the medical journals. The propriety of using precautions was a disputed point 100 years ago!

We may laugh at Dr. Pich's emphatic denial of the existence of gonorrhoea, and play his operations of gonorrhoea, chancre, and syphilis as distinct diseases but we must admire the energy and independence with which he worked out his line of treatment. Throughout the book one perceives a man groping for light and an honest worker being stimulated to further efforts by an occasional glimmer which pierces the clouds of mystery.

Have I provided the promised food for thought? Let this one point remain in our minds: the treatment of gonorrhoea has made no rational advance in 100 years! We must all admit that there is room for improvement especially in those cases where the posterior urethra is affected and which like the "suppressed gonorrhoea" "behaves sometimes very strangely."

As my old Professor of Surgery used to say: "A third year student can successfully treat a case of syphilis but it takes an experienced surgeon to cure the dog."

# SOME OBSERVATIONS ON PITUITARY TUMORS, WITH REMARKS ON THE TREATMENT OF NAUROS.

By JEROME LUTHERMAN T. JONES, M.D., D.C.

*Chief Medical Officer, U. S. S. Albatross*

IN THE JOURNAL OF THE ROYAL NAVAL MEDICAL SERVICE, of July, 1903, the editors have suggested that it would be a matter of general interest if Naval medical officers would submit their views on a standard treatment of syphilis in the Navy. Having had a considerable experience in the treatment of this disease in the venereal wards at H.M.S. during the early days of 1902, and having followed with much interest all changes of treatment since then, I should like to state briefly my opinion on this important subject.

Before considering the treatment of syphilis, however, I should like first to discuss briefly a few points in relation to primary venereal sores. We appear to be coming to be advancing too quickly here. I mention this as no one should a patient suffering from a primary venereal sore be treated specifically until it has been demonstrated either clinically or microscopically that such sore is syphilitic. To general otherwise and treat clinicians with salvarsan or mercury as a routine on the assumption that they may be so may become specific or unsatisfactory. Such a procedure in my opinion could only be justified in those cases with sores which are clinically doubtful and when the dark ground method for the examination of the serum of the sore for spirochetes is not available. Besides doing our utmost to prevent syphilis coming at all, our chief aim is to diagnose the disease at the earliest possible stage and if the treatment becomes general that all cases irrespective of their nature were to be treated with salvarsan at one of its indications we would tend to become careless in our diagnosis, thinking at first of little account as to any cure the patient concerned would get (25). The want of care in the early diagnosis of syphilis is just what we wish to avoid. Naval medical officers will remember the case where practically every case was labeled "chancre" until "malignant" appeared. During the last decade great advances have been made and as I shall show later when referring to the cases which have occurred in this ship a large percentage of venereal cases can be diagnosed accurately as chancre or primary syphilis in the case very few.

Prophylaxis at the time of exposure to infection and such diagnosis as all cases of venereal were to be the most important way in which we can save many campaigns against syphilis. But prophylaxis is a matter of which must be properly carried out, and I should like to emphasize here the importance of applying the colored ointment which is generally used before entrance and as immediately afterwards. The great value of the use of the colored ointment is not sufficient, recognizing, not only

which does not as a declaration, but it acts also as a laboratory a part of great importance which is often overlooked, and sometimes greatly the one of diagnosis which are the determining causes of infection. On this point, (Hirsch) applies in very numerous in many parts, especially amongst themselves, and the "procedures" consistent has been largely taken up health care. During the period covered by this report on some cases have been indicated by the cases who have used it of the sharp onset of several cases which was referred to later cases had made use of the previous content.

I must hardly emphasize here the great importance of diagnosis according to each stage. In a paper published in the *Journal of State Medicine* I have already discussed this previous [1], and Fildes and Longmire in this *Journal* [2] have treated the subject very fully. In brief, primary eosinophilia has occurred on the primary symptoms of the early stages of the disease with the result which we have indicated above that a much closer study has been made of the primary material than has been in a widely understood them we consider that eosinophilia can be found positive in a relatively early case, in which the disease is diagnosed in the primary stage before the Wassermann reaction has become positive. Cases of eosinophilia in this stage are designated now as the "Type A" (1), (2), and Barrett and Fildes [3] record forty four cases treated in this stage with no clinical relapses and the relapses of the Wassermann reaction after four months. In the early days of infection during cases of eosinophilia began to occur, and the number of these increased as weeks of treatment became more gradually and "such cases of eosinophilia were easily observed and also indicated with accuracy above."

Between July, 1919 and June, 1920, thirty cases of primary eosinophilic leucemia occurred in H.M.'s Dispensary, and I propose to discuss these cases, bringing out in it as possible the various points in diagnosis and diagnosis and the results of treatment in those cases which proved to be eosinophilic. Cases occurring later than June, 1920 have been previously reported owing to the comparatively short period during which they have been under observation. Although the number of cases under review is small, I have brought them forward as they have all, with the exception of 1920, have been personal observation for a period ranging from seventeen months to six months and, taken together with similar cases from other stages may prove very useful. Of these thirty cases ten were diagnosed as rheumatoid and twenty as eosinophilic. One of the ten cases diagnosed as rheumatoid proved to be eosinophilic. In this case a single case was not present in which an *Escherichia coli* could be found. I wish here to mention, when they were had, almost half of these other cases developed accompanied by such inflammation of the peritoneum and the patient was discharged to hospital where a number more, similar and several observations developed later. Of the thirty cases therefore, nine were rheumatoid, and twenty one were eosinophilic, giving an incidence of

diagnosed 50 per cent, and epithelial 70 per cent. The diagnosis was made by the clinical appearance of the lesion, the condition of the conjunctival glands and the presence or absence of a pithule. The period of incubation is sometimes of value as a guide but the reasons which are obvious it is hopelessly unreliable. In the diagnosed cases the diagnosis was confirmed later, in seven of the nine cases the Wassermann reaction tested once and a half to two months later remained negative and after the time of testing we have found clinical signs of syphilis in the remaining cases after the original lesions had healed over, cases which proved to be syphilis followed back exposure to infection.

When the dark ground method of examination is available I consider that no diagnosis case should be treated specifically until the presence of a pithule has been demonstrated. It would appear to be still an open question as to what is the best method of procedure in doubtful cases when the dark ground apparatus is not available for diagnosis, in the "Yes" men, however, this contingency should rarely arise and if cases should occur under such conditions I am of the opinion that we should wait the definite signs of syphilis to appear before commencing specific treatment. We must not lose sight of the fact that a large percentage of venereal cases can be diagnosed by clinical signs alone but the characteristic conditions can not develop for some time, perhaps weeks and it is in such cases that the dark ground method of examination is so valuable. I would suggest the following procedure in cases of primary venereal cases—

- (1) All cases to be treated with saline drainage until diagnosed.
- (2) When cases are obviously syphilis, begin salivarian treatment at once.
- (3) When cases are suspected of syphilis examine by the dark ground method on at least three occasions on alternate days.
- (4) If a pithule has been found treat accordingly.
- (5) If the diagnosis is doubtful watch the case for three months to confirm the diagnosis and have a Wassermann test carried out on three occasions at weekly intervals, the first test to be done one month after the appearance of the case.

As we have seen twenty-one cases of syphilis occurred in this ship during the year ending June 30 1936, the last of the cases under observation actually occurred on May 1 of that year. Of these twenty-one cases seventeen were primary syphilis the majority of which were diagnosed early in the course of the disease, but as it was not feasible to have Wassermann tests done before commencing treatment it has not been possible to differentiate between A and B types. The first treatment were G cases, secondary signs being present before salivarian treatment was commenced. In eight of the seventeen primary cases the diagnosis was made on definitely, and was readily made by clinical signs alone. In five cases the clinical signs were suggestive but not sufficiently definite to diagnose syphilis. In these cases a pithule was found. In the four

remaining cases the ulcers again were stopped and the diagnosis was made by depositing the pus into a *S. pallida*.

All three typical cases were treated in hospital with gold or N. & B. In the majority of cases the course consisted of one weekly injection of the former drug, and the total amount given in each case varied from 1.0 to 2.5 grm. Those cases which occurred when we were nursing were given mercury until they could be sent to hospital for "gold." The results of the treatment were as follows:—

*Case 1.*—Cases A and B were the almost regular patients. In neither case the Wassermann reaction tested every three months has remained negative, seven cases have been negative on three occasions during nine months, seven cases have been negative on two occasions during six months, two were negative at the end of three months when they left the ship for England, one case only showed a relapse of the Wassermann reaction which occurred during the seventh month. The patient was almost entirely a Case 2. The case which was negative on discharge on the day it was first seen by means of the dark ground method, and the patient was sent to hospital the following day, where he received 200 grm. of gold. As in the writer's experience a Wassermann relapse is not seen in most treatments the blood, when found to be positive was examined a second time one week later, when the positive finding was corroborated.

*Four Cases.*—Clinical relapse, no, Wassermann relapse 2. Wassermann remained positive, 3. no relapse of Wassermann 1.

In one of the relapse cases two injections of mercury, 1 gr.-wise given on board before patient could be sent to hospital, where he received 100 grm. of gold. At the end of three months Wassermann was negative, three months later it was strongly positive. A second course of gold 2.4 grm. was then given and three months later the Wassermann was negative. The second relapse case received hyalargylin 2 ccs. 2 gr. s.d.s. for eight days on board, and then N. & B. 1½ grm., and gold 0.3 grm., in hospital, relapse of Wassermann occurred during the fourth month. The case which remained positive received only 1.15 grm. of gold. A further course of gold 2.5 grm. was given six months after the first, and the Wassermann reaction has been negative on two occasions during six months. The fourth case which has shown a negative Wassermann on two occasions during six months, received 0.9 grm. of gold and 2.0 grm. N. & B.

As I have already stated, the number of cases considered here is very small, especially some of the 4-type, but these cases should be study not only now in the Navy and some engineering or tropical when we find patients with secondary signs already present coming up for their first course of treatment. Of the few cases which occurred in this ship two were secondary, the disease, and sometimes was present when they were first seen. The third relapsed here, marked phenomena with secondary signs,

and a catheter placed after her discharge to keep it free continuously. The results of a treatment of this kind suffered from a second important complication with catheter: the suppuration was made less effective immediately after it was made after a first injection of mercury, e.g., had been given.

The results of treatment in the case of primary syphilis simply demonstrate what has also been so frequently shown, that the majority of patients in this stage of the disease can be readily cured. The number of cases of secondary syphilis is too small to yield much information of value, but the results show that a large proportion of D cases will require more than one course of treatment. Farnell and Pridie (3) in a series of 144 of these cases, which received an injection with something of 0.45 gram. of "B14" found that the treatment failed in thirty. Five (3.4 per cent.) in 222 cases the Wassermann remained negative during periods ranging from four to six months.

With reference to the question of a standard treatment for syphilis, I do not think that we have ever had a standard treatment in the true sense of the word. But we can have a standard treatment in numerous ways: (I) cases of primary syphilis with a positive Wassermann; (II) cases of primary syphilis with a positive Wassermann and no (III) cases of secondary syphilis; in other words, in A, B and C cases. When such courses of treatment with "091" or "B14" preparations have been given, each case must be dealt with separately and further course given, where necessary the clinical relapses or relapses of Wassermann. I do not propose to make any suggestion as to the nature of these first courses, the standard preparations which should be used, the dosage and number and frequency of injections. These important questions must be left to the discretion of the open state who are actually engaged in repeated work. But I should like to state here that in my opinion the time has come when the routine administration of mercury in the treatment of syphilis should be discontinued. Many medical officers to whom I have spoken on this subject hold the same view, but a large number still believe in its use. This question is too large, however, to attempt to discuss here and I shall only state briefly my own views on the subject. Mercury in any form should be given only in the few cases in which "subacute" therapy cannot be safely carried out, or in those cases of syphilis which occur under circumstances where such treatment is not immediately available, e.g., when a ship is on a cruise. In these latter cases it is my custom to begin mercurial injections at once, and at the first opportunity send the patient to hospital for "091." Considering the fact that practically all workers with experience in this field are agreed that salvarsan and its various derivatives are much superior to mercury in any form, it is difficult to understand why the routine administration of this latter drug in the treatment of syphilis has continued to long.

I have made no reference here to treatment in old cases of syphilis, or cases belonging to the D type, as I do not think any form of standard treatment can be applied to them. These cases must be handled case

in the Yery, and within a few days, great swarms of the mites of spider with which we have treated, do not however, with almost equal success. It seems as a rule, that we are by no means so successful in showing by the Wassermann test, were disappointed, and I was of the opinion then that these cases should only be given salvarsan treatment when active signs of the disease were present. It is that case, however, 685<sup>1</sup> preparations were given in much smaller amounts, and during recent years with larger doses, better results have been obtained. Perrell and I also

(1) on a series of twenty nine cases, found that eight (27 per cent.) gave negative Wassermann for periods varying from ten to fifteen months after a course of 1911.

Cas. D. was only has been under treatment in this city. The patient with active signs and a Wassermann + + +, received 34 gms of gold. Wassermann has now been negative so two months in falling in, malarial.

It must be first, however, be understood, as suggested above for A, B, and C cases—and must be understood clearly well upon that they should be—a will be necessary to lay down definitely the length of the periods during which the malarial signs should be kept under observation and to decide also what periods of time they should be considered as. In primary cases as we have seen, it is often difficult to have Wassermann tests carried out before malarial treatment and perhaps in such a scheme it may be found convenient to group A and B cases together. These cases might be considered, well as the end of twelve months if no clinical relapses or relapses of Wassermann have occurred. Cases should probably be kept under observation for two years, although research work carried out on the relapses (1) would appear to indicate that a shorter period might be sufficient. I refer the reader again to Perrell and Pálfi's report to the Medical Research Committee on the 'ultimate results of treatment of epidemic with arsenical compounds'. This report is a most interesting one and should be studied by all Venereal Medical Officers. Much useful information is given as to the length of the period of liability to relapse, and I should like to add these somewhat desultory remarks of mine by putting one paragraph from this part of the report.

Taking all cases together, it is probable to conclude that in every instance of observed relapse that was detectable by the Wassermann reaction within six to seven months in the case of the B cases or eight to nine months in the C cases, and then it may be assumed, in the absence of evidence to the contrary, that a disease which is negative after seven months, or a C case after nine months, will not relapse and is cured. The slight prolongation of the probation period in C cases is due to the fact that they are on the whole, examples of an older infection.

1912 Nov 12-13

<sup>1</sup> *Annals of the Med. Soc.*, September 1910.

<sup>2</sup> *Report to the Venereal Medical Society, Medical Research, vol. 2, p. 171.*

<sup>3</sup> *Med. and Hygiene Committee Report, 1910.*

<sup>4</sup> *Annals of the Med. Soc.*, December 1911.



## Royal Medical History of the War

### SURGICAL MEDICINE

THE ROYAL MEDICAL HISTORY OF THE WAR

CHIEF I.—IMMEDIATE SURGERY IN THE FIELD—continued

BY IMMEDIATE SURGEON OF WAR MEDICAL AN FRIGIATED  
IN HOSPITAL WINGS

By Surgeon-General F. J. A. DILLON, F.R.S.

The character and amount of immediate surgery on a battlefield varied in Hospital Ships varied a good deal with the circumstances, in which the wounded were received. For instance, the more the guns were fired, the more the Hospital Ship before the ship was in action in the ship, the more the Hospital Ship was a very important factor in the immediate surgery of these cases. In the Hospital Ship, the ship was in charge the length of time patients remained on board varied from thirty to forty-eight hours while conveying French wounded from Dunkirk to Cherbourg, during the first battle of Ypres in 1914 to others between there and four weeks when conveying wounded from the battlefield to England.

Under the former circumstances I took the whole time of the ship, when the patients were on board to dress their wounds, bandage them, and before transferring them to hospital trains and under the latter it was possible to treat them as soon as if they had arrived at their hospital.

(1) Quantity of Wounded on board on board — The number of the wounded on board on board the ship varied very much with the activity of the ship was working.

In the condition of the French wounded from the first Ypres fight, the number were more than anything we had in the past here in the war. They arrived on board completely exhausted, having with them, from having had a good (or forty-eight hours) under their hands for the first time. Many of them had been lying in the wet fields for hours, and had been lying in the mud for hours, and had been lying in the mud for hours, and had been lying in the mud for hours. The majority had their feet and legs damaged, and their wounds had not been dressed again.

Quite a large proportion of the fractures were not even splinted, and I have seen quite a number of very comminuted fractures of the femur exposed on board, with no splint and just a field dressing over the wound. The length of time some being wounded and arrival on board varied from

twenty-four hours to six days with these French wounded, as great numbers of them seem to have landed the men on their own, whenever it happened to have stopped on the way down. A few had been recently dressed or redressed, but by far the large number had their first field dressings on and had not been dressed by from there in six days. The consequence was that a large number of wounds were in a shocking condition. It was also among these batches of French wounded that consequently one saw the evil effects of a swabbed or too long applied tannic-acid, necessitating amputation of arm or leg for gangrene. That was certainly to be wondered at, when one knew that many of the wounded had got their nearest neighbor to apply their dressings and tannic-acid had then walked or crawled for many hours in any direction that they thought was the likeliest for being picked up by ambulances or boats.

(4) Condition of the wounded from the Gallipoli beaches. Since the Hospital Ship was working under very difficult conditions in these approaches to France. The weather was very hot and the atmosphere dry as opposed to cold and almost constant rain in France. The length of time elapsing between being wounded and arriving on board was much shorter than in France. In regard according to which beach was being worked. At Helles beach the average time was from transportation to twenty-four hours, a few cases taking as long as three days, the average at Anzac beach being only five to six hours and at Suvla beach came to ten hours. The "First Aid" had been most efficiently done on these cases, dressings being applied and dressings carefully applied, and operations of amputation given before being started on their journey to the beach.

There were two serious drawbacks to working with the wounded from the Gallipoli beaches. One was the plague of flies and the other was the fact that in many of these patients were already suffering from severe diarrhea when wounded.

The plague of flies was probably due to the extensive harem huts on shore and patients were landed on board simply black with myriads of flies. Very soon after landing on a few loads of wounded the whole ship, inside, outside, and deck being black with them. This is a picture that no one can possibly have any conception of, unless they have actually seen it. Every patient had to have his head and face covered with muslin to get any rest from the flies. On removing the dressings, wounds were often found to be already crusting with maggots. The easiest way after being wounded, is what I have myself found maggots in the wound, is only eight hours although I have been informed of maggots hatched out in wounds in even shorter periods. These maggoty wounds did just as well after cleaning as wounds without them, if anything then about seemed to be to leave saprophytic action.

The diarrhea was of severe summer type, and large numbers of the patients reported had defecated into their trousers when, twice or more often during their passage from dressing station to ship. The additional trouble

and notwithstanding a decreasing trend, possibly because of the increasing area of contaminated and unexposed contaminated backlogs of laundry (see table 1) common.

We had one negative experience in the condition of patients on admission. On November 26, 1915 at Berlin we took on 100 patients, most of whom were suffering from fresh lacerations in various degrees, and one of whom was able to walk up the ladder of the ship owing to exhaustion on being cold. There had been a snowstorm on November 25 with a very bitterly cold high wind, and I was informed that fourteen patients had died there cold on the night of the 26th in the hospital tents at Berlin. One of these 14 patients died on board immediately after admission from exhaustion, but the majority came round very quickly with warmth, rest, hot soup, etc., although a great many lost toes and portions of their feet from gangrene. There again we found Dulac's solution to be the best dressing for gangrene from frostbite.

(2) Preparation of Patients for Dressing Operations.—The following routine was adopted when receiving patients. Every patient had, even by a medical officer as he was landed onto the ship, a washed on board. If considered a suitable case for examination in a theatre he was placed in a cot coming on the deck, or into one or other theatre to await his turn. If not, he was put in bed in a ward or in a waiting case sent to a dressing station to be seen to by the medical staff of the dressing station. It was a standing rule that if the examining medical officer had any doubt as to his case as to which category it was belonged to, he was always to decide it was a theatre case. Thus all unexposed lacerations had expert repairs about the neck, arms, exposing amputations, all wounds where fresh hemorrhage was taking place, large lacerations and shell wounds, shrapnel wounds or all automatically passed through out to other theatres before being put to bed. This method of dealing with the wounded obtained commendable results, work for the whole staff, the largest number of patients in work, such as doctors, attended to first-aid and first-aid boxes in five minutes, first stretchers of twelve inches and various boxes were not abundant. During these long hours of work, sandwiches and coffee were supplied in regular intervals to the staff and patients in the waiting room, while the theatres were being worked down with a hoar. The theatres used to get into an undesirable condition of dirt and needed a washing, down frequently. There was no doubt that this remarkable dealing with all the more serious cases was the means of saving many lives and more limbs.

(a) Dressing of Wounds.—One of the most remarkable facts in dealing with many thousands of wounded, was the very slight amount of shock from which the average patient suffered. This may be ascribed to the rather massive hypodermis, impaction of receptors which they had received between the time of being wounded and the arrival at the ship. The men coming on board with severe shock, were generally cases of wounds of abdomen, chest, lacerated limbs and shell wounds with destruction of tissue over large areas, cases that had lost much blood from wounds of major

cracks, and areas of compound fractures of large bones. All cases of compound wounds were placed in bed at two small wards on the upper deck, one entirely each theatre. In one theatre or twenty four hours at the most might be taken in the operations. The small wounds for which such as wounds, but death, amputation and interventions when being considerable applied.

(3) *Wound Treatment*—Treating was attempted until the patient was brought into the theatre under an anaesthetic when his clothes having been removed, a wide area about the wound was shaved and well scrubbed with soap and water with the aid of a hot lamp. The area was then dried off with medicated spirit and I or 40 carbolic lotion applied.

(4) *Anaesthetics*—I was fortunate enough to have these men on my staff who had been used to giving anaesthetics in private practice, and during the numerous number of operations, I can remember no single case where there was any trouble with the anaesthetics. Chloroform, chloroform and ether in proportions of one to two, and upon other were the anaesthetics used in the above order of popularity. The patients were rapidly put under with very small amount of vomiting although of course the response of patients were in no way prepared for anaesthesia and so had a large percentage had these vomited full of undigested food and bones. The pupil was up quickly under the anaesthesia, being contracted by the morphia given at the first dressing station. The best physical condition of the crew and the prolonged absence from alcohol were the chief reasons why the anaesthetics were so well borne.

(5) *Theatre Treatment*—The first consisted, in work of the land as represented, in to have large, airy, roomy theatre and in the Hospital 'Yag' there was more business in having the first and second theatres making side by side converted into operating theatres, with plenty of room between decks and large double doors which were wide enough to allow of one patient being wheeled out, while another was being wheeled in.

The next point was to work on the administrative details of each operating table, in the smallest manner. Each table must have its own set of instruments, anaesthetics, gauze, dressings, drains of sterilized drainage, jar of iodine spirit, etc. Lastly, each table must have its own personnel, thoroughly drilled in the duties for which each member will be responsible when work commences.

In the *Yag* we were able to keep these operating tables going on the three masts, and all patients requiring immediate theatre treatment had been disposed of and sent on to their wards. The amount of labour used was enormous owing to the thorough drainage given to all wounds whether already open or likely to become so, and a great saving of time was secured by having three galleys close past containing, basin suspended by a pulley arrangement over each table. The quantity of drainage sent each day was also very considerable and as soon as a load of patients was disembarked, the whole staff were fully occupied in cleaning and disinfecting wards and cots and storing large quantities of drainage preparing to taking in the next load of patients.

(1) *Death, Attendants of Severe Wounds*.—Pulley wounds entered the war atmosphere completely without either 10 hours or 20-hour shifts, except when heavily injured and lost perfectly well without further assistance. Presumably all these wounds must be treated as major wounds, even if the clinician is, or is expected to be, not had time to develop before the wound closes under treatment in a hospital shop.

When one sees where the places of the, and the striking first storm of the Gullible machine, it would be rather interesting if signals of any are for women except. The skin for a while was covered the wound was well covered with a seal band with warm water and soap dried off with antiseptic spirit and 1 to 40 carbolic lotion applied over same made use. Then the wound was irrigated through holes and loose fragments of bone removed inside. Some of which had been much injured and was likely to slough was cut away also in suitable areas the skin edges of the wound. The wound openings for efficient drainage and large drainage tubes, except irrigation of every corner and every of the wound with other sterile salt solution, Dakin's hypochlorite solution or 1 to 5,000 iodine solution. All large open wounds were found to close up most quickly with the Carrel-Dakin method of continuous irrigation with hypochlorite solution also drainage but is changed much less often by this method so long as they were kept continuously wet by irrigating solution down the drainage tubes sinking out of the bandage covering the dressing. Another advantage of hypochlorite solution is that the wounds would cover and close when it is used. Hospital shops were left unattended for several days after operations until wound appeared subject to the eye.

(2) *Endiography*.—This comes as very late out (the "Immediate danger" in Hospital shops. Even so it has been proved to be the time necessary for x-ray photo, after. On a trip when patients were removed weeks or listed in the daily drainage. As outside light is good many x-ray photographs were taken to show the diagnosis of lesions bones and for the location of bullets and other foreign bodies.

(3) *Bandaging Wounds*.—It is a remarkable fact that not a single case of secondary hemorrhage occurred among over 50,000 cases, on which this article is based.

(4) *Splints*.—We were absolutely placed in the "Severe Hospital" shops with regard to splints as no experience was made to put compound of the personnel and there was no extremely suggestion to supply covering out any quantity of special splints required. The men also much indebted to the engineering staff of the force for making as many cases soft metal and more splints also were indispensable for splints. Moreover splinting was on the study with disappearing as it was not really strong enough for large bones limbs.

Among the wound splints we found most useful were Thomas' hip and knee splints. Hand, arm splints. Rib splints, triangle. Besides these we had

### 222 Immediate Surgery of War Wounds in Hospital Ship

many kinds of interrupted splints made on board to fit every case. The best splint, in my opinion, for the transport of broken thighs, was Thomas' splint.

(3) *Limitation of Immediate Surgery of Compound Wounds in Hospital Ships*.—There are two regions of the body which do not invite immediate surgery for gunshot wounds, viz. thorax and abdomen. In respect of both these, it usually proves shock when the patient is removed on board, and this alone puts out the question of immediate operation.

Wounds of the thorax, when the missile has passed through the chest or chest cavity to large vessels or spinal column, are remarkably well without surgical interference, the patient being kept under morphine and the shock counteracted. Usually patient has slight tachycardia and considerable dyspnea, but both pass off rapidly. A few develop pneumonia or consolidation of a lung. In gunshot wounds of the abdomen, each case must be dealt with according to its own particular symptoms. The majority of these cases are too shocked to stand immediate operations, and are placed in the Fowler position kept deeply under morphine, given nothing by the mouth, and only taken by the rectum or intravenously. A few proportion must be under the most expert treatment, under a spring sphygmometer drainage for three patients.

(4) *The most Rapidly Fatal Cases* arise from those dying very quickly from internal hemorrhage, viz. those in which the projectile has passed through the abdomen from side to side, the most favorable being those in which the projectile has passed anteroposteriorly through a lateral region of the abdomen. Wounds through the bladder or rectum only, or through both without injury to any other hollow organ, would usually be operated on at once and did remarkably well.

### 54 WARD OF PATIENTS TREATED FROM MEDICAL OFFICERS WHO HAVE SERVED ON BOARD HOSPITAL SHIPS

(1) Surgeon-Commander M. L. B. Bold, Hospital Ship *Phlegon* completed the digital condition and nerve status of the wounds during the French and Belgian wounded received from the first battle of Ypres. He also states on cases of secondary hemorrhage occurred on *Phlegon*.

(2) Temporary Surgeon from Prince of Wales Hospital Ship *China*.

This paper is based on shell wounds received during the British battle, the patients arriving on board the *China* within twenty-four to thirty-six hours of being wounded. The cases were seen before dressings rapidly had been put on, and were all treated as potentially infected wounds, clean edges and wound tract washed, wound washed and dressing afforded by four minutes. Dress was used as the only antiseptic with excellent results. If tightly wrapped and properly used, there are no limitations to cases due to surgery in hospital ships.

(13) Temporary Surgeon Lieutenant John Leachman, Hospital Ship *Rona* lays stress on the superiority of sand and iodoine solution over the other antiseptics used in the dressing of septic wounds. He points out the better results obtained in immediate surgery of abdominal wounds by efficient teamwork. He also gives incident an excellent account of pressure of the wound tract, showing deep wounding, due to a shrapnel wound of the thigh, with much contamination of the femur.

(14) Surgeon Lieutenant Hubert Clardy, R.N.V.R., Hospital Ship *Rona*. An excellent paper on "The Early Treatment of Lethal Gunshot Injuries." He points out the small amount of trouble usually caused by rifle bullet wounds, compared with shrapnel and shell wounds. He also calls attention to the excellent results obtained in wounds of large vessels—primary closure of such wounds was successfully accomplished, and it can only assume that the same experience with blood had cleared the femur and prevented deep infection from taking place.

(15) Surgeon Lieutenant Commander R. E. Fisher, Hospital Ship *Lady By*. This paper is published separately as no subject to that on "Lethal Gunshot Surgery of War Wounds" is presented in Hospital Ship, as it gives a good account of the work done in the small hospital yards.

#### NOTES ON IMMEDIATE SURGERY ON NAVAL WOUNDED IN HOSPITAL YARDS AND SMALL CRAFT

BY Surgeon Commander R. E. FISHER, R.N.

The following notes were made in 1915. They refer exclusively to wounds received in action by sailors and men of the *Divine Patrol*; the operations reported and the treatment advocated are the result of personal experience in the Hospital *Lady Leachman*.

*First Aid*—First aid was rendered by surgeons, practitioners and corporals on destroyers and other small ships, within an hour of the wounds being inflicted.

The method employed was the removal of clothing in the neighborhood of the wound, the application of iodine and the aseptic covering of the wound with a compound of double cyanoide grease and tamponade of the part by slings, splints or Red Rubberium stretchers. In some cases iodine was not used, the double cyanoide grease being applied to the wounds without any previous preparation. On May 10, 1915, I received a batch of twenty-two men, wounded by shellfire, they had received fatal wounds without iodine—within an hour of being wounded, and were passed through the operating theatre and dressing stations of the hospital ship about an hour later; of this number there ensued no cases of spreading infection.

the cases developed local signs, the treatment looked within injudicious.

Tourniquets were much in evidence on the limbs of the wounded. It appeared to me the tourniquets were used too freely than unduly giving the recuperative power of the tissues. I frequently saw tourniquets applied for wounds of the hands, forearms and feet, the bleeding from which could have immediately been controlled by local pressure (or compression and band binding). The tourniquet made of course and complicated by a Spanish wrench is very efficient for arresting hemorrhages, but if applied lightly is very damaging to the tissues.

Labels with details of patient's name, nature, site of injury, and amount of morphin given, were attached to each man's clothes and were of great assistance on arrival at hospital ship.

Morphin was administered hypodermically as a routine by all first aid stations, but the amount given varied. Most workers gave 1 gr. down, some 1/2 gr. down and some 1/4 gr. down. It was quite evident that nothing, less than 1/2 gr. down had any real effect. Many cases required two 1/2 gr. doses before they experienced relief. In these circumstances men were able to stand up, dress and transport of morphin, the statement of the amount and the pain caused by their injuries being as an anesthetic. Those of the line severely wounded in their state of nature would often be very noisy and troublesome, with these a moderate dose of morphin was nearly always necessary. A small dose appeared only to stimulate them to further injury.

*Preparatory treatment*.—As a general rule no preparation for operation could be given to the severely wounded beyond the administration of morphin hypodermically. A 1/2 gr. dose was always given to those who were noisy, restless or complained of acute pain, despite the fact that they had probably had a number done a few hours previously. The system on arrival of a batch of wounded on board was to divide them into two classes, A and B. Class A required treatment under a general anesthetic, class B could be dealt with at the dressing station. Class A was of two kinds, those who could be undressed washed and put to bed and those who were too severely injured to permit of their being moved until their turn for operation had arrived. These latter were kept in their stretchers morphin extra tablets and hot water bottles applied.

*Skin disinfection*.—The procedure always adopted was to wash the part with ether soap and hot water, wash three widely, wash soap soap with water rub the surrounding skin with a scrub soaked in methylated spirit and spray the wound and surrounding skin with iodine solution.

*Shock*.—The main measures we relied on for combating profound shock was intravenous injection of normal saline. The necessary apparatus and solution were always held in readiness in the D.T. and were prepared quickly. Primary shock appeared to be the most commonest form, but raising the blood pressure and was largely aided.



**Anesthesia**—The general anesthesia used was (1) and (2) mixture—nitrous oxide gas, part ether, two parts given on an open mask, at a quick and irregular method of inducing anesthesia. The area with which anesthesia was induced on the wounded was constantly very little dragging along plus where the average index with the useful proposition is that it is obvious subject for an anesthesia. The local anesthesia of the wounded was probably due partly to the anesthetic previously given and partly to the mechanical reason following the treatment of cases.

Post-operative vomiting was rare, but several cases of hiccups followed anesthesia and two cases developed atropine-poisoning. The hiccups caused distress to the patient through coughing but never gave rise to injury. The poisoning cases had definite long consequences as the result of anesthetic ether, in each case vomiting was, by times, on the third and fourth day respectively. These patients were not so profoundly ill as to the postoperative cases.

The local anesthesia used was cocaine and novocain, the latter appeared to give a longer and more complete anesthesia.

**Immediate Surgery**—The most serious shell-blast is the commonest cause of wounds, the action being either a splinter of the shell itself or some fragment of metal or wood of the clay pot explosion by the shell explosion. The resulting wounds, whether perforating, penetrating, or superficial are all lacerated and frequently there is much accompanying bruising. In such wounds, except of the scalp are very numerous.

The wounds may be conveniently be divided into the following three main types:—

- A—Shallow lacerated wounds
- B—Penetrating wounds
- C—Perforating wounds

#### PROCEDURE TREATMENT FOR EACH TYPE OF WOUND

##### Type A

- Step 1. Sterilization of the surrounding skin
- 2. Flush out wound with hot boroglycerine solution then cleaning skin to
- 3. Search for foreign bodies such as metal, clothing, etc.
- 4. Clean skin margin of wound
- 5. Cut off all injured portions of muscle and subcutaneous tissue
- 6. Remove bleeding points as far as possible
- 7. Flush wound with gentle solution of hypotonic solution
- 8. Apply sterile dressing and bandage loosely

##### Type B

- Step 1, 2 and 3 as for type A
- 4. Expose deep area part of both exterior and end of wound
- 5. 2 and 6 as in 4

### 200 Immediate Surgery of Wounds in Hospital Units.

**Step 1.** Insert drainage tube with frequent profuse irrigation the whole length of the wound, secure it by a suture at other opening, insert strips of gauze soaked in hypertonic saline from both openings alongside the drainage tube so that the gases approximate within the limb.

As in A.

#### Type C.

**Step 2.** as in A and B.

③ Fix the skin margin and enlarge wound up the leg up to the limb as separate to permit of thorough irrigation.

④ As with the drainage tube, so this type of wound is preferably closed and maintained in all exposure.

As in A and B.

⑤ Insert drainage tube to the base of the wound and surround it with saline gauze.

As in A and B.

**Step 3.** *Notes.*—I reserve primary closure for specially selected cases such as wounds of the scalp and wounds involving joints.

Wound at the knee and ankle appear to be particularly resistant to repair because of adequately cleaned frequently fixed by best technique.

It is important in these joints to prevent subsequent infection, that I consider primary closure should, if possible, be attempted where a joint is involved. The one case of penetrating wound of the knee joint which I closed fortunately remained aseptic and an unexposed joint resulted. In other injuries I have given up primary closure after repeated failure in earlier cases.

**Exposure of Wounds.**—As opposed to military surgery the wounds in civil surgery are rarely if ever, infected by bacteria from the surrounding organisms which produce gas gangrene therefore the exposure of a wound with its consequent destruction of nerve and loss of function is easily tolerated. On the contrary with civil wounds I make every endeavor to save bridges of skin and tendonous bands in order to facilitate healing and to decrease subsequent deformity.

**Fractures and Compound Surgery.**—Wounds complicated by compound fractures are undoubtedly the most difficult to deal with and undoubtedly the most unsatisfactory. In these cases I employ constant irrigation with hypertonic saline but was not successfully successful in preventing sepsis. My observations lead me to believe that the best method of treating these cases is on the Carol Daker principle by the latter method, provided that foreign bodies, particularly particles of clothing are removed at the primary operation and the main blood vessels and nerves are saved, union of the bones and healing of the wound may be confidently expected without septic complications.

In fractures of the jaw oblique T is perhaps most suitable flap.

colony harvest was 1.01  $\pm$  0.14. Males per colony were 1.9  $\pm$  0.26, whereas there is approximately 1.6 to most colonies. In general, colonies that are completely detached as fragments of these lower pass are probably less competitive powers than smaller fragments of long bones. After creating detritus tubes in order to assess some of the factors to fill parts of the wounds, I noticed above the way of both colonies to bond detritus.

My previous dealings with women complicated with the loss of the long hair has been to decide when immediate amputation should be indicated. In some cases amputation is the obvious treatment, in others it is equally obvious that an attempt to save the hair should be made. Of the doubtful cases I am convinced that amputation is the correct treatment on every occasion. The amputation should be made through the neck of fraxiers, as much skin and muscle as possible being saved and after adequate drainage has been provided for the flaps should be approximated by unabsorbed sutures. I have frequently saved by using the new suture in my methods with the result that I have had to do a much higher amputation later on account of gangrene and to some degree delay in amputation cost the patient his life.

**Later Treatment for Wounds**—Open wounds with drainage tubes, and gastric puncta were dressed daily, the entire drainage was removed I used the wounds irrigated with by potassium nitrate. In some instances I used the Iodoform gauze the other gauze was not removed for the first two days, after which both tubes and other gauze were removed at each dressing the former shortened and the latter reduced as much as required. If the food again improved the wounds were dressed twice daily, hydrogen peroxide was added and followed by two irrigations with hot Ringer's solution. When very shallow wounds became infected and bone fragments were used. At last I used potassium irrigations with sodium hypochlorite for infected wounds, but had to give them up on account of the marked loss of the solution and the slow reaction it caused. I used very large amounts of hot 99% by the same method as above. From then on potassium was I had previously mentioned in H H H S. I was only sorry not to say before to the report by the fact that the solution was not so efficiently prepared by me, as it was to the drug, where it was made under the direction of the United States.

**Enter Element of Foreign Matter**—Frequently wounds heal although the connective foreign body has not been removed. This failure may be due to unresorbed and green stain is not further trouble; on the other hand it is liable to cause abscesses or growth of bone, so it may shift the position to save time giving rise to pain or causing loss of function. Lastly removal should be undertaken if the foreign body is lodged near a joint, or lying on bone or in the neighborhood of a sensitive organ, or infection. In fact a foreign body of any size which is easily palpable should be removed. Its early history suggests it as the position. I believe to leave glass foreign bodies for some months before removing them is moment of the risk of infection.





New pattern of rope bedstead



View of room of J. R. Foster

### 220 Immediate Surgery of Wounded or Mangled Limbs

up a latent infection such as tetanus. The objection to only one cord does not exist in spinal surgery.

**Transport of Wounded**—The wounded were transported by either the Ford Robertson stretcher or sand carrier cot.

**New-Kelvinian Stretcher**—In our small hospital during this stretchers was found to be unsuitable for transporting wounds over so to say shocks either by reason of the mass demand on a single stretcher, also it was by far the most unsatisfactory method of moving patients were they were confined on our passages and stairways were narrow, and could not be supported by a stretcher not so many stretchers. The stretcher has the additional advantage of maintaining the body and limbs of the patient, and in cases of fracture of the lower limb it satisfactorily takes the place of temporary splints. I saw one case of fractured femur who had been there transported on a Ford Robertson stretcher before the limb was finally set so rapidly he experienced only slight discomfort and was not in the least shocked.

**Naval Canvas Cot**—This cot makes a comfortable bed for a wounded man but it is bulky 3 ft. long by 2 ft. 4 in. wide; it is also heavy. When raised by a derrick the cot must first be placed on a Pandemonium slings. Originally this cot was carried on the shoulders of four bearers, but owing to the danger of a fall and also the probable inequality in height of the bearers rope handles were fixed for carrying purposes.

At the suggestion of Chief W.D. William Hobbs I was induced to try the effect of the following small alterations in the naval canvas cot, namely to change the position of the rope handles from the end flaps of the cot to the side the handles being placed on either side near the head and feet respectively. The original position of the handles causes much inconvenience in the manner in which the cot has to be moved. Unless the bearers are careful to hold the cot well away from their legs there being protruded the cot is very apt to hang against them, causing unnecessary laceration to the bearers and patient. The new position of the handles obviates this difficulty. Another advantage of the new position of the handles is that when the cot is used as a bed being suspended from the handles, the head and feet of the patient are much more of course, also if the heel of the cot has been lacerated by ground bottom and the end flaps tucked under the mattress the cot could be used for cases of fractured lower extremities. It should be noted that when the cot is slung up, the rope slings should be doubly bent; overlaid to prevent chipping and the cot lying on the patient serves as the top rolls. The alterations are simple and advantageous that I have had most of the cots in the yards altered accordingly.

Photographs and diagrams are given.



He is not only a Doctor but also an Officer and, as such, must be respected by his staff and fellow officers. A medical officer who always works in comparative safety at the bottom of a deep dugout and expects his staff and fellow officers to keep all wounded in line will be badly disappointed with the outcome of operations. He must be an example to his men, move with them in do anything he would not do himself, and often personally experienced this, bringing on at a casualty which is lying on a pile of more than usual danger. If by a strong hand he can speed up operations, it is his duty to do so, but in no other case is it probable.

In brief, "quick attention and personal safety," is, from the former point of view, the motto of the forward medical officer, but, whilst both are of the utmost importance, the latter must always be subservient to the former.

#### THE FORWARD AMBULANCE

The chance of a Regimental Aid Post is largely dependent upon the military situation—that is, whether trench warfare differs greatly from that during an advance.

**Aid Post during an Advance.**—When an attack is in progress the Battalion Medical Officer's Headquarters may frequently be inside a shell hole. It is however necessary to remember that in every case it is badly wounded always to establish a definite R.A.P. at the extreme possible opportunity and to mark it clearly with a Red Cross flag. To this point the Battalion members become being wounded and from a First Aid post the Battalion members carry them back.

On going into action, trenches it is exceedingly useful if the enemy aid post can be located and taken over, preferably complete with its medical officer, personnel and stores.

During an advance both the Medical Officer and staff and staff officers must turn on their heels everything which they may require. My own lot during an attack, though somewhat restricted, was extremely satisfactory. It consisted of—

- (1) A Valley hypodermic syringe placed on the interior of the left breast pocket.
- (2) A bottle of morphine solution (3 grams in 10 ounces) tied with a rubber cap, attached by a safety pin to the same pocket as the water bottle—one full of water, the other of brandy (occasionally the brandy water bottle will hold the contents of two bottles of brandy).
- (3) A large handkerchief containing, fast held (Swampy) (bottle) dressings were not carried as they are too bulky.
- (4) An instrument case in the right breast pocket.
- (5) A large triangular bandage in the left pocket.
- (6) Red's Green St. John's Wort ointment in the other.
- (7) A rubber bandage round the wrist.
- (8) Every necessary pocket, compass, cigarette, matches and candle, plus an electric torch, was slung round the neck.





## HOSPITAL LAWRENCEVILLE IN THE FIRST TWO WEEKS

The first aid treatment of a wounded man is carried out during the period which elapses from the time he is injured till he reaches a Casualty Clearing Station.

Apart from the immediate saving of life the main duty of the forward medical officers is to do everything in his power to arrest the bleeding of all wounds by first intention. In a large number of cases suppuration is prevented by early and complete removal of the wound. As this cannot be done further forward than the Casualty Clearing Station, quick attention to this point is of the utmost importance. All wounds are, as a general rule, being deeply, promptly debrided and experience has proved that the most efficient method of healing suppurative complications is by excision within 48, or, four hours.

In the Royal Naval Hospital, the Regimental Aid Post was always situated some 400 yds. apart from the front companies of the Battalion as possible, i.e. close to Battalion Headquarters. It was manned by the Regimental Medical Officer, his orderly and five men of the medical company attached to each Company were four stretcher bearers who kept in close touch with the R.A.P. and either visited the Medical Officer of companies or brought them directly to him. At the R.A.P. the wounded man could be a safe person, situated under shelter. His immediate welfare it was often a consideration and fairly well protected against lost during an advance if he was not infrequently merely a shell hole or portion of damaged trench. The Battalion Medical Officer's main duty was how to get his men back to Field Ambulance with the least possible pain and if there was room a rush of men to treat the wound in such a way that it need not be touched until the Casualty Clearing Station was reached.

The duty of the Field Ambulance stretcher bearer was to transport wounded from the R.A.P. to the Advanced Dressing Station of the Field Ambulance. This was usually about two miles behind the line, and was the nearest possible point to which a man in condition could be brought. The patient then continued his journey by car to the Main Dressing Station of the Field Ambulance which was usually about five miles behind the trenches. Here he was fed, and then transferred to a car of the Motor Ambulance Company, which took serious cases to the Casualty Clearing Station and travel cases to the first Station.

In every attack it is essential that the Battalion Medical Officer pass to the offensive should necessitate the ground and back up a professional scheme for the collection and treatment of his wounded. Before a given copy of the Battalion Medical Arrangements for the attack on Beaumont was given.

DOI: 10.1002/for

With these assumptions, however, we can not only find the optimal policy, but also the optimal control policy.

From the Companies address the following: (1) 1941-1942, 1943-1944, 1945-1946, 1947-1948, 1949-1950, 1951-1952, 1953-1954, 1955-1956, 1957-1958, 1959-1960, 1961-1962, 1963-1964, 1965-1966, 1967-1968, 1969-1970, 1971-1972, 1973-1974, 1975-1976, 1977-1978, 1979-1980, 1981-1982, 1983-1984, 1985-1986, 1987-1988, 1989-1990, 1991-1992, 1993-1994, 1995-1996, 1997-1998, 1999-2000, 2001-2002, 2003-2004, 2005-2006, 2007-2008, 2009-2010, 2011-2012, 2013-2014, 2015-2016, 2017-2018, 2019-2020, 2021-2022, 2023-2024, 2025-2026, 2027-2028, 2029-2030, 2031-2032, 2033-2034, 2035-2036, 2037-2038, 2039-2040, 2041-2042, 2043-2044, 2045-2046, 2047-2048, 2049-2050, 2051-2052, 2053-2054, 2055-2056, 2057-2058, 2059-2060, 2061-2062, 2063-2064, 2065-2066, 2067-2068, 2069-2070, 2071-2072, 2073-2074, 2075-2076, 2077-2078, 2079-2080, 2081-2082, 2083-2084, 2085-2086, 2087-2088, 2089-2090, 2091-2092, 2093-2094, 2095-2096, 2097-2098, 2099-2100, 2101-2102, 2103-2104, 2105-2106, 2107-2108, 2109-2110, 2111-2112, 2113-2114, 2115-2116, 2117-2118, 2119-2120, 2121-2122, 2123-2124, 2125-2126, 2127-2128, 2129-2130, 2131-2132, 2133-2134, 2135-2136, 2137-2138, 2139-2140, 2141-2142, 2143-2144, 2145-2146, 2147-2148, 2149-2150, 2151-2152, 2153-2154, 2155-2156, 2157-2158, 2159-2160, 2161-2162, 2163-2164, 2165-2166, 2167-2168, 2169-2170, 2171-2172, 2173-2174, 2175-2176, 2177-2178, 2179-2180, 2181-2182, 2183-2184, 2185-2186, 2187-2188, 2189-2190, 2191-2192, 2193-2194, 2195-2196, 2197-2198, 2199-2200, 2201-2202, 2203-2204, 2205-2206, 2207-2208, 2209-2210, 2211-2212, 2213-2214, 2215-2216, 2217-2218, 2219-2220, 2221-2222, 2223-2224, 2225-2226, 2227-2228, 2229-2230, 2231-2232, 2233-2234, 2235-2236, 2237-2238, 2239-2240, 2241-2242, 2243-2244, 2245-2246, 2247-2248, 2249-2250, 2251-2252, 2253-2254, 2255-2256, 2257-2258, 2259-2260, 2261-2262, 2263-2264, 2265-2266, 2267-2268, 2269-2270, 2271-2272, 2273-2274, 2275-2276, 2277-2278, 2279-2280, 2281-2282, 2283-2284, 2285-2286, 2287-2288, 2289-2290, 2291-2292, 2293-2294, 2295-2296, 2297-2298, 2299-2300, 2301-2302, 2303-2304, 2305-2306, 2307-2308, 2309-2310, 2311-2312, 2313-2314, 2315-2316, 2317-2318, 2319-2320, 2321-2322, 2323-2324, 2325-2326, 2327-2328, 2329-2330, 2331-2332, 2333-2334, 2335-2336, 2337-2338, 2339-2340, 2341-2342, 2343-2344, 2345-2346, 2347-2348, 2349-2350, 2351-2352, 2353-2354, 2355-2356, 2357-2358, 2359-2360, 2361-2362, 2363-2364, 2365-2366, 2367-2368, 2369-2370, 2371-2372, 2373-2374, 2375-2376, 2377-2378, 2379-2380, 2381-2382, 2383-2384, 2385-2386, 2387-2388, 2389-2390, 2391-2392, 2393-2394, 2395-2396, 2397-2398, 2399-2400, 2401-2402, 2403-2404, 2405-2406, 2407-2408, 2409-2410, 2411-2412, 2413-2414, 2415-2416, 2417-2418, 2419-2420, 2421-2422, 2423-2424, 2425-2426, 2427-2428, 2429-2430, 2431-2432, 2433-2434, 2435-2436, 2437-2438, 2439-2440, 2441-2442, 2443-2444, 2445-2446, 2447-2448, 2449-2450, 2451-2452, 2453-2454, 2455-2456, 2457-2458, 2459-2460, 2461-2462, 2463-2464, 2465-2466, 2467-2468, 2469-2470, 2471-2472, 2473-2474, 2475-2476, 2477-2478, 2479-2480, 2481-2482, 2483-2484, 2485-2486, 2487-2488, 2489-2490, 2491-2492, 2493-2494, 2495-2496, 2497-2498, 2499-2500, 2501-2502, 2503-2504, 2505-2506, 2507-2508, 2509-2510, 2511-2512, 2513-2514, 2515-2516, 2517-2518, 2519-2520, 2521-2522, 2523-2524, 2525-2526, 2527-2528, 2529-2530, 2531-2532, 2533-2534, 2535-2536, 2537-2538, 2539-2540, 2541-2542, 2543-2544, 2545-2546, 2547-2548, 2549-2550, 2551-2552, 2553-2554, 2555-2556, 2557-2558, 2559-2560, 2561-2562, 2563-2564, 2565-2566, 2567-2568, 2569-2570, 2571-2572, 2573-2574, 2575-2576, 2577-2578, 2579-2580, 2581-2582, 2583-2584, 2585-2586, 2587-2588, 2589-2590, 2591-2592, 2593-2594, 2595-2596, 2597-2598, 2599-2600, 2601-2602, 2603-2604, 2605-2606, 2607-2608, 2609-2610, 2611-2612, 2613-2614, 2615-2616, 2617-2618, 2619-2620, 2621-2622, 2623-2624, 2625-2626, 2627-2628, 2629-2630, 2631-2632, 2633-2634, 2635-2636, 2637-2638, 2639-2640, 2641-2642, 2643-2644, 2645-2646, 2647-2648, 2649-2650, 2651-2652, 2653-2654, 2655-2656, 2657-2658, 2659-2660, 2661-2662, 2663-2664, 2665-2666, 2667-2668, 2669-2670, 2671-2672, 2673-2674, 2675-2676, 2677-2678, 2679-2680, 2681-2682, 26

The authors are indebted to Mrs. E. J. G. Smith, M.D., for her assistance in the preparation of the manuscript.

Philip Spector, 31, a private investigator, says that the FBI's "411" Postal card was "a total disappointment" because the Bureau "questioned the validity of the card and indicated by a return card that collection of the material had failed."

Should space permit, the following information is provided for the reader interested in the field. Detailed information may be obtained from the author by a written request to the author at the address given above.

Let  $\mathcal{A}$  be an algebraic structure. Suppose  $\mathcal{A}$  is a  $\mathcal{B}$ -algebra. Then  $\mathcal{A}$  is a  $\mathcal{B}$ -algebra.

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[4] These waves occur in an elliptical polarization geometry, and their study may reveal a wealth of information about the physical processes involved in the generation of the waves and the propagation of the waves in the plasma.

[illegible]

If the  $\alpha$ -Nuc matrix is equal to 0, the matrix is called *non-nuclear*. It should be noted that a nuclear matrix is not necessarily symmetric.

1. *Journal of the American Medical Association*, 1997; 277: 1039-1043.

1. *Journal of Management Studies*, 1990, 27, 1, 1-14.

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In general, animals I mean those which are unimpaired by any wound, muscular or bony lesion. In the study of such animals it is necessary to maintain liberty, the animal in a large, airy stable where, as the variety of wound referred to, most of all shock exposures I and the methods of treatment adopted are largely dependent on the type of animal used.

**Subjects**—In the present study 100 fathers used were exactly the 100 fathers of the previous linked study and 100 sons and were linked fathers from a previous study. Linkage was complete.

The German letter consists of harden's first combined with a soft side 1 envelope covered with German silver. It is 1.1 m in length and weighs 136 g.

The Turkish bullet is basically identical with the German bullet

The French bullet spins at 4,000 rpm and has no wings. It is 1.58 in. long and weighs 187 gr.

The Dutch boiler has a central core of hardened lead covered with furnace proof cement. It is 4 dm. diam. and weighs 230 lb.

While it is unnecessary here to dwell on the subject of Indians, certain facts must be mentioned:

(1) Many leaders are apt to develop an unduly incremental view, viewing the war, and sometimes even their own business, as being a *fait accompli*.

(2) The range of a bullet is very low indeed. In the West Camp at Cape Helms, when the wind was favourable and subsequently a man was wounded by a Turkish bullet fired from some 1000 yds away.

(4) It balled passing through the reading period of a search banner greatly diminished and hence may cause a high amount of returns. Its velocity, however, is greatly diminished and hence the sound is usually unsteady and non-persistent.

(4) In Istanbul a cow frequently finds that the Turkish buller beetle runs in companion pairs, the young being found hilly upland and the bull young down into the valleys or low areas.

(4) Subjects lived at a range of 500 yards and under, which let the signal about "point on," cause only a small variation in the class and produce little tension of the underlying process. They also gave the clothing at such a velocity that little clothing or dirt is carried on and hence the wound has every chance of being promptly cleaned.

(4) Bulbs, fixed at over 200 yards range frequently but often "in on" (in) line on, and hence more somewhat large wheels. In this case some between 1000-1500 yards.

I was frequently able to verify in my instantaneous remarks I had previously met or read to the behaviour of high velocity bullets in the course of their trajectory. I had several cases in which the bullet had obviously struck the man's legs and not where the base of the bullet had not left any. In some cases it was always due to the speed of the bullet being decreased and the speed produced by the rolling of the barrel being lost which is incompatible from long shots down.

These shells very greatly in nature and may be roughly divided

(1) High explosives shell (a) Having in the act by means of a time fuse (b) Discharge on impact (c) Detonated action

## (c) Shrapnel

## (1) Bombs

## (2) Rifle grenades

## (3) Grenade mortar shells

High explosive shells contain a large explosive charge and are the cause of explosive and deeply shattering effects of the most serious character, from which such shells burst. A fragment from a high explosive shell is dangerous and has sharp edges. A fragment which has a small part not generally wounded by the shell - the mass of metal in which the shell is contained.

Shrapnel shells must be remembered that both the fuse and the body of a shrapnel shell are almost as dangerous as the actual bombs.

Shrapnel bombs have a low velocity and small penetrating power. The range the wound inflicted is largely dependent on the height at which the shell bursts—the lower the bursting height, the higher is the velocity at the body and hence the greater the damage done. Shrapnel is particularly useful for attacking the enemy in the trenches. The shrapnel is carried into the trench and upon usually killed.

Bombs and Rifle Grenades—In the early very primitive bomb was used. It was composed of three separate sections and filled with a small collection of iron shrapnel and high explosive were largely in the shape of a mortar bomb, while the bombs carried all shell cases filled with a small amount of high explosive. Before the invention of the bomb which had to be lighted by a match before being thrown, were greatly used but by the time the U. S. Army reached France the standard type was the segmented bomb. The Germans possessed a variety of bombs but those in most common use were the steel egg and mortar bombs. The rifle grenades used in the U. S. Army were built on a principle almost identical with that of the bomb.

In a general rule it was found that all bombs were only locally destructive and a man standing ten yards away was moderately safe.

French War Bombs—These shells were generally in use but all are now used and as a rule burst on impact. They can be distinctly seen exploding through the air throughout the whole of their course and so can often be avoided. In my experience they rarely rank first as the most terrifying weapon of war and are largely instrumental in causing shell shock. Their action is fairly good in combat and a man in the front lines is to be exploding bomb upon shell in use.

Chapman—There is no really good working classification of unexploded war bombs. Some divide them according to the weapon which produces them, but such a classification is of no practical value and it seems better to describe them as—

- (1) Penetrating bombs. (2) Penetrating bombs. (3) Lacerating bombs. (4) Gas bombs. Or even more simply (a) Deep wounds (b) Explosive wounds.



Figure 1 (left) illustrates how the temporary level will increase over time. The response must first rise, representing delay in the system, and then level out, representing a saturation of the system. The response must first rise, representing delay in the system, and then level out, representing a saturation of the system. The response must first rise, representing delay in the system, and then level out, representing a saturation of the system.

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It is suggested that the following instructions be given to the observer of the ship's log, in order to secure uniformity of record in the future.

# INSTRUCTIONS TO OBSERVERS OF SHIPS' LOGS, FOR THE YEAR 1911.

The following instructions are given to the observer of the ship's log, in order to secure uniformity of record in the future. The observer is to be careful to observe the following instructions, and to record the same in the ship's log.

1. The observer is to be careful to observe the following instructions, and to record the same in the ship's log. 2. The observer is to be careful to observe the following instructions, and to record the same in the ship's log.

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11. The observer is to be careful to observe the following instructions, and to record the same in the ship's log. 12. The observer is to be careful to observe the following instructions, and to record the same in the ship's log.





using the following procedure: (1) weigh 10 g. of the sample and (2) ...

The results of the analysis are given in Table I. The results of the analysis of the sample are given in Table I.

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# ANALYSIS OF THE SAMPLE

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The results of the analysis are given in Table I. The results of the analysis of the sample are given in Table I.

### ANALYSIS OF THE SAMPLE

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| 3. ... | ... | ... |

The results of the analysis are given in Table I. The results of the analysis of the sample are given in Table I.



[illegible][illegible]

Downloaded At: 11:53 11 September 2009

Water is the highly detailed 1961 film, "Reflections and Real Connections" about the world.

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*It is also important to note that the value of the drug is assumed to drop after the phase of the experiment ends. It also must recall*

Chlorine is a green, poisonous gas and is corrosive.

The degree of glass is determined by combining isopleths for crystallization in isothermal space, and then equally overlying and underlaying the curve. The degree will peak at the glass of a curve where the space.

**Drainage of Piles**—Piles enter through the central plate hole, at the bottom part (3-4) after which in accordance with the flow there is a lateral movement, and a second and a third hole on each side, which is used to pass back.















The hypopharynx was, as noted in above, disengaged in the course of early after hours.

On February 20, the patient got his hands under the blanket when he was having a violent bout with elevated position. Some days later he developed subcutaneous nodules on the palms of both hands another in chest which regularly appeared on his feet. In the interim these nodules increased in size, thickened and developed a strong odor.

After the regular course he lasted about a fortnight the epistaxis was renewed in part on a large scale exposing the modified treatment. In the case of the hands the skin epistaxis came off as a glove.

The discharges on the feet were apparently modified by the rubber foot boots. The epistaxis became nodules and puffed off in smaller pieces and the exposed area was slightly better.

Similarly the forehead became thickened and raised from the head but by wetting and keeping up epistaxis and were eventually dead. There was no loss of the finger nails.

In no case was evidence in getting of the mite observed. By the middle of April the skin nodules had completely cleared up. Both the sides of the feet and the palms of the hands were covered with healing epistaxis and the two nails had begun to grow.

#### HYPOPHARYNGEAL LESIONS

By GEORGE CORNER M.D. (MAY) L. B. BAKER M.D. M.D.

I. E. M. case. The patient was operated upon on July 19, 1910, for acute epistaxis. The epistaxis was gangrenous and the entire mouth reduced and some gas was emitted. The epistaxis with necrosis was removed. Cough was used throughout the operation. The incision was through the external oblique the subcutaneous nodules being light. The dissection was finished, recovery being unimpaired.

On October 16, 1910, signs of epistaxis appeared under the nose and a mass formed. On November 12 there was no evidence of the subcutaneous wall below and under the epistaxis nodules. The incision was opened when the dissection of the right nostril was found to be involved below the subcutaneous. Two incisions were made, removing a very little gas.

On December 17 another incision in the wall below was made and dissection. He was admitted to St. S. Hospital, Boston on January 11, 1911. There were two discharging incisions one posterior to the subcutaneous and one just below and entered in epistaxis operation was. There was a large collection of gas filling the whole hypopharyngeal region and extending anteriorly into both nasal cavities.

The swelling had all the appearance of a detached bladder. The incision was very heavy and thin bed. Epistaxis showed infected gas coming.

An operation was performed and a vertical incision was made in the middle line of the incision for 6 in., and the subcutaneous epistaxis layer by layer between the two incisions down to the peristome. The incision was made distal and proximal, and again 3 in. thick. A part of incision was then passed just above the patient down to the peristome space and gas was removed, thick and greenish. The layer was then inserted and close perfectly was closed (see right and left of the middle wound) and was epistaxis towards posterior. The gas above was apparently discharging just at the incision, also the gas to the right in region of epistaxis was. Large discharges were carried into both nostrils with great force discharges. Wound was closed up. The results though slow was progressive and complete. The nasal healed, and the subcutaneous became quite full.

[illegible]

It is well known that the most important sources of information in the field of the history of the development of the human mind are the works of the great thinkers of the past. The study of these works is a necessary condition for the development of the human mind. The study of these works is a necessary condition for the development of the human mind. The study of these works is a necessary condition for the development of the human mind.

[illegible]

1998-1999 2000-2001 2002-2003

by Katherine A. Hargrave, L. B. ELLIOTT, and J. A. HARRIS

The influence of the type of the specimen entering under particular conditions on the results concerning the use of pressure obtained in the experiments is shown in Figure 1. As can be seen, the value of pressure is constant for all specimens.

In the Royal Chinese Library which the emperor bought of the personal and manuscript mark above as it is called up, we meet in the Confucius Temple (Kong-tsin-tan) at the school of Peking has a short record of music, so well arranged, and yet so simple that future being drawn to the "original" style by the various branches of the same.

The economic reforms in Turkey in Istanbul helped to be expressed on the streets, and it is said that in the city, support for large-scale strikes is growing. In 1998, in 1999, the number of strikes in Turkey has increased to 100. Many of these are being organized by the trade unions, in support of the workers' efforts to limit privatization and small-scale firms in the manufacturing sector. In the 1990s, workers have, on the other hand, up to January 1999, withdrawing from various factories and other decisions due to long-term inflation influence.

[illegible]

That was what happened in the early part of 1944, and the result was the early training of the women (as was suggested, I think) and with training from

<sup>10</sup> When all subjects were all in university, lower level education in 1990s were between 10 and 12 years.





TEACHING IN THE SUNDAY SCHOOL

By GEORGE CHRISTIAN, New Haven, Ct.

RECENTLY, I have been studying a number of articles in the *Bookman* on Education. They have led me to the conviction that the subject of religious education is the health of the Body of Christ, and that it is one of the most important of our challenges.

It is not only the fact that we have a large number of children in our Sunday schools, but more than that, the fact that the children of the church are the future of the church, that makes this a subject of such importance.

One of the first things I saw in the *Bookman* in the issue of the 1st of May was an article on the subject of the Sunday school. It was written by a man who is well known in the church, and it was a very good article. It was written by a man who is well known in the church, and it was a very good article.

What I found in the article was that the Sunday school is the heart of the church, and that it is the place where the children of the church are taught the truths of the faith. It is the place where the children of the church are taught the truths of the faith, and it is the place where the children of the church are taught the truths of the faith.

So, if we want to have a strong church, we must have a strong Sunday school. We must have a Sunday school that is well taught, and that is well supervised. We must have a Sunday school that is well taught, and that is well supervised. We must have a Sunday school that is well taught, and that is well supervised.

There is a great deal of talk about the Sunday school, but there is not much that is done. We must have a Sunday school that is well taught, and that is well supervised. We must have a Sunday school that is well taught, and that is well supervised.

It is not only the fact that we have a large number of children in our Sunday schools, but more than that, the fact that the children of the church are the future of the church, that makes this a subject of such importance. It is not only the fact that we have a large number of children in our Sunday schools, but more than that, the fact that the children of the church are the future of the church, that makes this a subject of such importance.

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It is not only the fact that we have a large number of children in our Sunday schools, but more than that, the fact that the children of the church are the future of the church, that makes this a subject of such importance. It is not only the fact that we have a large number of children in our Sunday schools, but more than that, the fact that the children of the church are the future of the church, that makes this a subject of such importance.

So, if we want to have a strong church, we must have a strong Sunday school. We must have a Sunday school that is well taught, and that is well supervised. We must have a Sunday school that is well taught, and that is well supervised. We must have a Sunday school that is well taught, and that is well supervised.

There is a great deal of talk about the Sunday school, but there is not much that is done. We must have a Sunday school that is well taught, and that is well supervised. We must have a Sunday school that is well taught, and that is well supervised. We must have a Sunday school that is well taught, and that is well supervised.

It is not only the fact that we have a large number of children in our Sunday schools, but more than that, the fact that the children of the church are the future of the church, that makes this a subject of such importance. It is not only the fact that we have a large number of children in our Sunday schools, but more than that, the fact that the children of the church are the future of the church, that makes this a subject of such importance.

So, if we want to have a strong church, we must have a strong Sunday school. We must have a Sunday school that is well taught, and that is well supervised. We must have a Sunday school that is well taught, and that is well supervised. We must have a Sunday school that is well taught, and that is well supervised.









*Microscopic Technique and Practice*, by Richard Seaford, with an Appendix on Microtopography. By Joseph H. Bennett. 256 pages. P.O. Box 1000, University Chemical Co., South Island, P.O. Box 4, 261, London. H. K. Lewis and Co., Ltd. 1951. Price 7s 6d net.

As a guide to medical students preparing for examinations, this book is valuable as a supplement to a more complete work on Microscopic Method and Technique. It has an introduction defining pharmaceutical terms, weights and measures, percentages, etc.

The body of the book is a series of micrographs on drug design, chemicals, and unprepared preparations of the British Pharmacopoeia. The information is concise and accurate, but limited to the most important details. The illustrations, however, are rather poor, and possibly selected to follow a course of lectures, otherwise it is difficult to understand why micrographs and diagrams should be grouped under the names of unimportant secondary ingredients.

The dose tables on pages 202-225 should be very useful, and the general principles of Microtopography in the Appendix are much more easily remembered than a mere list of microtopographies.

*For Extra Pharmaceutical Analysis of Macerals and Waxes*, revised by W. D. Brown, Macerals F.I.D. F.C.S. and Wynn Wynn, M.D. (Lond. D.P.A.). Interscience Lecture vol. 11. 27 pages + 1000 London H. K. Lewis and Co. Ltd. 1951. Price 15s 6d net.

These volume contains analytical and other details of various waxes which could not be included in Vol. I without making it excessively large, but of such importance as to warrant new and photographs that both volumes of 'The Extra Pharmacopoeia' are essential additions to their libraries.

Among the subjects of special interest dealt with in this volume are: waxes, butyric, hyaluronic, and the structure of the blood cells in comparison of proprietary waxes, and the structure of the waxes and drugs, but one of the most valuable features of Vol. I is the expert analysis that with confidence can be made in these days of self-dragging the advantage of being able to study closely, organic compounds used in the preparation, especially the synthesis, etc. in view of time.

## PROPOSITIONS, &c

(continued)

### (1) INDEX, OR THESAURUS, AND DESCRIPTIVE CATALOGUE (2) LIVING TELETYPE

(London: Messrs. Parker, Davis and Company, 25 and 27, Abchurch Lane, E.C. 4.)

Two shares have been advanced by us and medical officers who may wish to obtain copies are invited to apply to Messrs. Parker, Davis and Company, care Messrs. the Journal.

### FINISAL POINTS IN PHOTOGRAPHY

(London: Messrs. Durrant's Wellman and Company, Seven Tail  
Buildings, E.C. 1.)

Patrons are invited to patronise these in the useful little publication. Any of our readers, contributing this Journal and sending a postcard to Messrs. Durrant's Wellman and Company, can obtain a copy of the pamphlet gratis and post free.







The targets were changed and the quantity of  $\text{CO}_2$  reduced through the week.  $\text{CO}_2$  emissions were reduced.

(16) The authors of *Communicable Diseases* address in a direct and detailed fashion the single subject we hope to extend upon in this paper.

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1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024, 2025, 2026, 2027, 2028, 2029, 2030, 2031, 2032, 2033, 2034, 2035, 2036, 2037, 2038, 2039, 2040, 2041, 2042, 2043, 2044, 2045, 2046, 2047, 2048, 2049, 2050, 2051, 2052, 2053, 2054, 2055, 2056, 2057, 2058, 2059, 2060, 2061, 2062, 2063, 2064, 2065, 2066, 2067, 2068, 2069, 2070, 2071, 2072, 2073, 2074, 2075, 2076, 2077, 2078, 2079, 2080, 2081, 2082, 2083, 2084, 2085, 2086, 2087, 2088, 2089, 2090, 2091, 2092, 2093, 2094, 2095, 2096, 2097, 2098, 2099, 2100, 2101, 2102, 2103, 2104, 2105, 2106, 2107, 2108, 2109, 2110, 2111, 2112, 2113, 2114, 2115, 2116, 2117, 2118, 2119, 2120, 2121, 2122, 2123, 2124, 2125, 2126, 2127, 2128, 2129, 2130, 2131, 2132, 2133, 2134, 2135, 2136, 2137, 2138, 2139, 2140, 2141, 2142, 2143, 2144, 2145, 2146, 2147, 2148, 2149, 2150, 2151, 2152, 2153, 2154, 2155, 2156, 2157, 2158, 2159, 2160, 2161, 2162, 2163, 2164, 2165, 2166, 2167, 2168, 2169, 2170, 2171, 2172, 2173, 2174, 2175, 2176, 2177, 2178, 2179, 2180, 2181, 2182, 2183, 2184, 2185, 2186, 2187, 2188, 2189, 2190, 2191, 2192, 2193, 2194, 2195, 2196, 2197, 2198, 2199, 2200, 2201, 2202, 2203, 2204, 2205, 2206, 2207, 2208, 2209, 2210, 2211, 2212, 2213, 2214, 2215, 2216, 2217, 2218, 2219, 2220, 2221, 2222, 2223, 2224, 2225, 2226, 2227, 2228, 2229, 2230, 2231, 2232, 2233, 2234, 2235, 2236, 2237, 2238, 2239, 2240, 2241, 2242, 2243, 2244, 2245, 2246, 2247, 2248, 2249, 2250, 2251, 2252, 2253, 2254, 2255, 2256, 2257, 2258, 2259, 2260, 2261, 2262, 2263, 2264, 2265, 2266, 2267, 2268, 2269, 2270, 2271, 2272, 2273, 2274, 2275, 2276, 2277, 2278, 2279, 2280, 2281, 2282, 2283, 2284, 2285, 2286, 2287, 2288, 2289, 2290, 2291, 2292, 2293, 2294, 2295, 2296, 2297, 2298, 2299, 2300, 2301, 2302, 2303, 2304, 2305, 2306, 2307, 2308, 2309, 2310, 2311, 2312, 2313, 2314, 2315, 2316, 2317, 2318, 2319, 2320, 2321, 2322, 2323, 2324, 2325, 2326, 2327, 2328, 2329, 2330, 2331, 2332, 2333, 2334, 2335, 2336, 2337, 2338, 2339, 2340, 2341, 2342, 2343, 2344, 2345, 2346, 2347, 2348, 2349, 2350, 2351, 2352, 2353, 2354, 2355, 2356, 2357, 2358, 2359, 2360, 2361, 2362, 2363, 2364, 2365, 2366, 2367, 2368, 2369, 2370, 2371, 2372, 2373, 2374, 2375, 2376, 2377, 2378, 2379, 2380, 2381, 2382, 2383, 2384, 2385, 2386, 2387, 2388, 2389, 2390, 2391, 2392, 2393, 2394, 2395, 2396, 2397, 2398, 2399, 2400, 2401, 2402, 2403, 2404, 2405, 2406, 2407, 2408, 2409, 2410, 2411, 2412, 2413, 2414, 2415, 2416, 2417, 2418, 2419, 2420, 2421, 2422, 2423, 2424, 2425, 2426, 2427, 2428, 2429, 2430, 2431, 2432, 2433, 2434, 2435, 2436, 2437, 2438, 2439, 2440, 2441, 2442, 2443, 2444, 2445, 2446, 2447, 2448, 2449, 2450, 2451, 2452, 2453, 2454, 2455, 2456, 2457, 2458, 2459, 2460, 2461, 2462, 2463, 2464, 2465, 2466, 2467, 2468, 2469, 2470, 2471, 2472, 2473, 2474, 2475, 2476, 2477, 2478, 2479, 2480, 2481, 2482, 2483, 2484, 2485, 2486, 2487, 2488, 2489, 2490, 2491, 2492, 2493, 2494, 2495, 2496, 2497, 2498, 2499, 2500, 2501, 2502, 2503, 2504, 2505, 2506, 2507, 2508, 2509, 2510, 2511, 2512, 2513, 2514, 2515, 2516, 2517, 2518, 2519, 2520, 2521, 2522, 2523, 2524, 2525, 2526, 2527, 2528, 2529, 2530, 2531, 2532, 2533, 2534, 2535, 2536, 2537, 2538, 2539, 2540, 2541, 2542, 2543, 2544, 2545, 2546, 2547, 2548, 2549, 2550, 2551, 2552, 2553, 2554, 2555, 2556, 2557, 2558, 2559, 2560, 2561, 2562, 2563, 2564, 2565, 2566, 2567, 2568, 2569, 2570, 2571, 2572, 2573, 2574, 2575, 2576, 2577, 2578, 2579, 2580, 2581, 2582, 2583, 2584, 2585, 2586, 2587, 2588, 2589, 2590, 2591, 2592, 2593, 2594, 2595, 2596, 2597, 2598, 2599, 2600, 2601, 2602, 2603, 2604, 2605, 2606, 2607, 2608, 2609, 2610, 2611, 2612, 2613, 2614, 2615, 2616, 2617, 2618, 2619, 2620, 2621, 2622, 2623, 2624, 2625, 2626, 2627, 2628, 2629, 2630, 2631, 2632, 2633, 2634, 2635, 2636, 2637, 2638, 2639, 2640, 2641, 2642, 2643, 2644, 2645, 2646, 2647, 2648, 2649, 2650, 2651, 2652, 2653, 2654, 2655, 2656, 2657, 2658, 2659, 2660, 2661, 2662, 2663, 2664, 2665, 2666, 2667, 2668, 2669, 2670, 2671, 2672, 2673, 2674, 2675, 2676, 2677, 2678, 2679, 26

\*The Marshall Islands is a member of the Pacific Islands Forum, a regional organization for non-aligned states.

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1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024, 2025, 2026, 2027, 2028, 2029, 2030, 2031, 2032, 2033, 2034, 2035, 2036, 2037, 2038, 2039, 2040, 2041, 2042, 2043, 2044, 2045, 2046, 2047, 2048, 2049, 2050, 2051, 2052, 2053, 2054, 2055, 2056, 2057, 2058, 2059, 2060, 2061, 2062, 2063, 2064, 2065, 2066, 2067, 2068, 2069, 2070, 2071, 2072, 2073, 2074, 2075, 2076, 2077, 2078, 2079, 2080, 2081, 2082, 2083, 2084, 2085, 2086, 2087, 2088, 2089, 2090, 2091, 2092, 2093, 2094, 2095, 2096, 2097, 2098, 2099, 2100, 2101, 2102, 2103, 2104, 2105, 2106, 2107, 2108, 2109, 2110, 2111, 2112, 2113, 2114, 2115, 2116, 2117, 2118, 2119, 2120, 2121, 2122, 2123, 2124, 2125, 2126, 2127, 2128, 2129, 2130, 2131, 2132, 2133, 2134, 2135, 2136, 2137, 2138, 2139, 2140, 2141, 2142, 2143, 2144, 2145, 2146, 2147, 2148, 2149, 2150, 2151, 2152, 2153, 2154, 2155, 2156, 2157, 2158, 2159, 2160, 2161, 2162, 2163, 2164, 2165, 2166, 2167, 2168, 2169, 2170, 2171, 2172, 2173, 2174, 2175, 2176, 2177, 2178, 2179, 2180, 2181, 2182, 2183, 2184, 2185, 2186, 2187, 2188, 2189, 2190, 2191, 2192, 2193, 2194, 2195, 2196, 2197, 2198, 2199, 2200, 2201, 2202, 2203, 2204, 2205, 2206, 2207, 2208, 2209, 2210, 2211, 2212, 2213, 2214, 2215, 2216, 2217, 2218, 2219, 2220, 2221, 2222, 2223, 2224, 2225, 2226, 2227, 2228, 2229, 2230, 2231, 2232, 2233, 2234, 2235, 2236, 2237, 2238, 2239, 2240, 2241, 2242, 2243, 2244, 2245, 2246, 2247, 2248, 2249, 2250, 2251, 2252, 2253, 2254, 2255, 2256, 2257, 2258, 2259, 2260, 2261, 2262, 2263, 2264, 2265, 2266, 2267, 2268, 2269, 2270, 2271, 2272, 2273, 2274, 2275, 2276, 2277, 2278, 2279, 2280, 2281, 2282, 2283, 2284, 2285, 2286, 2287, 2288, 2289, 2290, 2291, 2292, 2293, 2294, 2295, 2296, 2297, 2298, 2299, 2300, 2301, 2302, 2303, 2304, 2305, 2306, 2307, 2308, 2309, 2310, 2311, 2312, 2313, 2314, 2315, 2316, 2317, 2318, 2319, 2320, 2321, 2322, 2323, 2324, 2325, 2326, 2327, 2328, 2329, 2330, 2331, 2332, 2333, 2334, 2335, 2336, 2337, 2338, 2339, 2340, 2341, 2342, 2343, 2344, 2345, 2346, 2347, 2348, 2349, 2350, 2351, 2352, 2353, 2354, 2355, 2356, 2357, 2358, 2359, 2360, 2361, 2362, 2363, 2364, 2365, 2366, 2367, 2368, 2369, 2370, 2371, 2372, 2373, 2374, 2375, 2376, 2377, 2378, 2379, 2380, 2381, 2382, 2383, 2384, 2385, 2386, 2387, 2388, 2389, 2390, 2391, 2392, 2393, 2394, 2395, 2396, 2397, 2398, 2399, 2400, 2401, 2402, 2403, 2404, 2405, 2406, 2407, 2408, 2409, 2410, 2411, 2412, 2413, 2414, 2415, 2416, 2417, 2418, 2419, 2420, 2421, 2422, 2423, 2424, 2425, 2426, 2427, 2428, 2429, 2430, 2431, 2432, 2433, 2434, 2435, 2436, 2437, 2438, 2439, 2440, 2441, 2442, 2443, 2444, 2445, 2446, 2447, 2448, 2449, 2450, 2451, 2452, 2453, 2454, 2455, 2456, 2457, 2458, 2459, 2460, 2461, 2462, 2463, 2464, 2465, 2466, 2467, 2468, 2469, 2470, 2471, 2472, 2473, 2474, 2475, 2476, 2477, 2478, 2479, 2480, 2481, 2482, 2483, 2484, 2485, 2486, 2487, 2488, 2489, 2490, 2491, 2492, 2493, 2494, 2495, 2496, 2497, 2498, 2499, 2500, 2501, 2502, 2503, 2504, 2505, 2506, 2507, 2508, 2509, 2510, 2511, 2512, 2513, 2514, 2515, 2516, 2517, 2518, 2519, 2520, 2521, 2522, 2523, 2524, 2525, 2526, 2527, 2528, 2529, 2530, 2531, 2532, 2533, 2534, 2535, 2536, 2537, 2538, 2539, 2540, 2541, 2542, 2543, 2544, 2545, 2546, 2547, 2548, 2549, 2550, 2551, 2552, 2553, 2554, 2555, 2556, 2557, 2558, 2559, 2560, 2561, 2562, 2563, 2564, 2565, 2566, 2567, 2568, 2569, 2570, 2571, 2572, 2573, 2574, 2575, 2576, 2577, 2578, 2579, 2580, 2581, 2582, 2583, 2584, 2585, 2586, 2587, 2588, 2589, 2590, 2591, 2592, 2593, 2594, 2595, 2596, 2597, 2598, 2599, 2600, 2601, 2602, 2603, 2604, 2605, 2606, 2607, 2608, 2609, 2610, 2611, 2612, 2613, 2614, 2615, 2616, 2617, 2618, 2619, 2620, 2621, 2622, 2623, 2624, 2625, 2626, 2627, 2628, 2629, 2630, 2631, 2632, 2633, 2634, 2635, 2636, 2637, 2638, 2639, 2640, 2641, 2642, 2643, 2644, 2645, 2646, 2647, 2648, 2649, 2650, 2651, 2652, 2653, 2654, 2655, 2656, 2657, 2658, 2659, 2660, 2661, 2662, 2663, 2664, 2665, 2666, 2667, 2668, 2669, 2670, 2671, 2672, 2673, 2674, 2675, 2676, 2677, 2678, 2679, 2680, 26

Figures showing the results of studies in the United Kingdom are reported in Table 1. The results show that the prevalence of the disease is higher in the United Kingdom than in the United States, and that the prevalence is higher in the United Kingdom than in the United States.

3. "Nonlinear" devices can only be supplied at the public expense in Germany.<sup>3</sup> In that case the

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(Please attach any other pages of your answers to this page.)

1974. *Medical History Society—Canadian, no. 2* (Toronto).

(7) 800-678-7291

**Für die Zwecke des § 6 Abs. 1 Nr. 1 Satz 1 EStG ist der Gewinn**

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<sup>a</sup>Values are means  $\pm$  standard deviation. <sup>b</sup>Significance between 0.5% and 1% NaCl solution is indicated by different letters.

the following are the results of the regression analysis of the model:

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[illegible]

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Journal  
of the  
Royal Naval Medical Service.

Original Articles.

ENCEPHALITE LITTEBARNICA

A REPORT OF KING CANAL TRIPPLE IN THE ROYAL NAVAL  
HOSPITAL, HULL.

By GEORGE LITTEBARN TRIPPLE, C. I. D. MAJOR, R.N., &c.

WITH A REPORT ON THE BRONCHIO-PNEUMONIA FROM THE PRE-  
SENCE OF ENCEPHALITE.

By GEORGE TRIPPLE, C. I. D. MAJOR, R.N., &c. DPH, DTM, &c.

During the past three years this disease has occurred in epidemic form in this country, as well as in Europe, America and Australia and a large amount of literature has appeared concerning it.

Although the disease has only been brought into prominence lately it is probable that it has appeared in any form or epidemic form for many centuries.

Until the present epidemic it does not appear to have occurred in the Royal Navy and it is the purpose of this paper to give a detailed account of the nine cases that have been treated in the Royal Naval Hospital, Hull, during the past twelve months.

It is to be hoped that these cases will be remembered as being among epidemic dysentery and enterocolitis.

The notes on the cases are as follows:—

Case 1.—A man in H.M.S. *Thetis* (sloop, 2,000 tons) is placed of post in the right side of the deck of the masts on November 24, 1895. November 25. Patient complained of dyspepsia moderately. November 27. He was ordered up by dysentery but actually died. General physical signs in the thoracic system were absent and he was discharged to hospital on the fifth day of his illness with the diagnosis of "grippe," his temperature having ranged from 99° F. to 100° F.

These data can be interpreted as indicating that there were no planned agreements between the September 2002 elections and 2000-2001. While negative effects of 2000-2001 are not detected.

[illegible][illegible]

Comment 2: The jet pointer color was purple. The ball above. Shredding

[illegible]

On 11 Jan. 1984, apparatus in MHW Jopard aged 17 was placed on the beach by an observer (S. J.P.). The slope (nearly the previous angle) and position were marked with flags and boards that the area was double.

the 1990s, the left quarter will have had 10 people and the right quarter will have had 10 people. The market was being measured annually.

the 1000 m<sup>2</sup> of the system was then installed and the only water distribution system was a 1000 m<sup>2</sup> of the system. The temperature had been ranging from 20 to 30°C and the water was 1000 m<sup>2</sup> of the system.

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Temperature 112.5 F; pulse 84; respiration 21. No. 10. Abdominal pain; no tenderness. Patient calls for Tylenol and demands to know where he can obtain more. He is extremely nervous. People around slightly to the right of center and slightly to the left.

Common: In *Utricularia* spp. magnifies, pinches, pinches on both sides. Both the lower and upper lips are slightly pinched (usually). The upper lip is the most common. The lower lip is the most common. The lower lip is the most common.

However, in 1970 the previous 14 had under primary care close to 100,000 patients. That is clearly an increase of almost 50%.

1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024, 2025, 2026, 2027, 2028, 2029, 2030, 2031, 2032, 2033, 2034, 2035, 2036, 2037, 2038, 2039, 2040, 2041, 2042, 2043, 2044, 2045, 2046, 2047, 2048, 2049, 2050, 2051, 2052, 2053, 2054, 2055, 2056, 2057, 2058, 2059, 2060, 2061, 2062, 2063, 2064, 2065, 2066, 2067, 2068, 2069, 2070, 2071, 2072, 2073, 2074, 2075, 2076, 2077, 2078, 2079, 2080, 2081, 2082, 2083, 2084, 2085, 2086, 2087, 2088, 2089, 2090, 2091, 2092, 2093, 2094, 2095, 2096, 2097, 2098, 2099, 2100, 2101, 2102, 2103, 2104, 2105, 2106, 2107, 2108, 2109, 2110, 2111, 2112, 2113, 2114, 2115, 2116, 2117, 2118, 2119, 2120, 2121, 2122, 2123, 2124, 2125, 2126, 2127, 2128, 2129, 2130, 2131, 2132, 2133, 2134, 2135, 2136, 2137, 2138, 2139, 2140, 2141, 2142, 2143, 2144, 2145, 2146, 2147, 2148, 2149, 2150, 2151, 2152, 2153, 2154, 2155, 2156, 2157, 2158, 2159, 2160, 2161, 2162, 2163, 2164, 2165, 2166, 2167, 2168, 2169, 2170, 2171, 2172, 2173, 2174, 2175, 2176, 2177, 2178, 2179, 2180, 2181, 2182, 2183, 2184, 2185, 2186, 2187, 2188, 2189, 2190, 2191, 2192, 2193, 2194, 2195, 2196, 2197, 2198, 2199, 2200, 2201, 2202, 2203, 2204, 2205, 2206, 2207, 2208, 2209, 2210, 2211, 2212, 2213, 2214, 2215, 2216, 2217, 2218, 2219, 2220, 2221, 2222, 2223, 2224, 2225, 2226, 2227, 2228, 2229, 2230, 2231, 2232, 2233, 2234, 2235, 2236, 2237, 2238, 2239, 2240, 2241, 2242, 2243, 2244, 2245, 2246, 2247, 2248, 2249, 2250, 2251, 2252, 2253, 2254, 2255, 2256, 2257, 2258, 2259, 2260, 2261, 2262, 2263, 2264, 2265, 2266, 2267, 2268, 2269, 2270, 2271, 2272, 2273, 2274, 2275, 2276, 2277, 2278, 2279, 2280, 2281, 2282, 2283, 2284, 2285, 2286, 2287, 2288, 2289, 2290, 2291, 2292, 2293, 2294, 2295, 2296, 2297, 2298, 2299, 2300, 2301, 2302, 2303, 2304, 2305, 2306, 2307, 2308, 2309, 2310, 2311, 2312, 2313, 2314, 2315, 2316, 2317, 2318, 2319, 2320, 2321, 2322, 2323, 2324, 2325, 2326, 2327, 2328, 2329, 2330, 2331, 2332, 2333, 2334, 2335, 2336, 2337, 2338, 2339, 2340, 2341, 2342, 2343, 2344, 2345, 2346, 2347, 2348, 2349, 2350, 2351, 2352, 2353, 2354, 2355, 2356, 2357, 2358, 2359, 2360, 2361, 2362, 2363, 2364, 2365, 2366, 2367, 2368, 2369, 2370, 2371, 2372, 2373, 2374, 2375, 2376, 2377, 2378, 2379, 2380, 2381, 2382, 2383, 2384, 2385, 2386, 2387, 2388, 2389, 2390, 2391, 2392, 2393, 2394, 2395, 2396, 2397, 2398, 2399, 2400, 2401, 2402, 2403, 2404, 2405, 2406, 2407, 2408, 2409, 2410, 2411, 2412, 2413, 2414, 2415, 2416, 2417, 2418, 2419, 2420, 2421, 2422, 2423, 2424, 2425, 2426, 2427, 2428, 2429, 2430, 2431, 2432, 2433, 2434, 2435, 2436, 2437, 2438, 2439, 2440, 2441, 2442, 2443, 2444, 2445, 2446, 2447, 2448, 2449, 2450, 2451, 2452, 2453, 2454, 2455, 2456, 2457, 2458, 2459, 2460, 2461, 2462, 2463, 2464, 2465, 2466, 2467, 2468, 2469, 2470, 2471, 2472, 2473, 2474, 2475, 2476, 2477, 2478, 2479, 2480, 2481, 2482, 2483, 2484, 2485, 2486, 2487, 2488, 2489, 2490, 2491, 2492, 2493, 2494, 2495, 2496, 2497, 2498, 2499, 2500, 2501, 2502, 2503, 2504, 2505, 2506, 2507, 2508, 2509, 2510, 2511, 2512, 2513, 2514, 2515, 2516, 2517, 2518, 2519, 2520, 2521, 2522, 2523, 2524, 2525, 2526, 2527, 2528, 2529, 2530, 2531, 2532, 2533, 2534, 2535, 2536, 2537, 2538, 2539, 2540, 2541, 2542, 2543, 2544, 2545, 2546, 2547, 2548, 2549, 2550, 2551, 2552, 2553, 2554, 2555, 2556, 2557, 2558, 2559, 2560, 2561, 2562, 2563, 2564, 2565, 2566, 2567, 2568, 2569, 2570, 2571, 2572, 2573, 2574, 2575, 2576, 2577, 2578, 2579, 2580, 2581, 2582, 2583, 2584, 2585, 2586, 2587, 2588, 2589, 2590, 2591, 2592, 2593, 2594, 2595, 2596, 2597, 2598, 2599, 2600, 2601, 2602, 2603, 2604, 2605, 2606, 2607, 2608, 2609, 2610, 2611, 2612, 2613, 2614, 2615, 2616, 2617, 2618, 2619, 2620, 2621, 2622, 2623, 2624, 2625, 2626, 2627, 2628, 2629, 2630, 2631, 2632, 2633, 2634, 2635, 2636, 2637, 2638, 2639, 2640, 2641, 2642, 2643, 2644, 2645, 2646, 2647, 2648, 2649, 2650, 2651, 2652, 2653, 2654, 2655, 2656, 2657, 2658, 2659, 2660, 2661, 2662, 2663, 2664, 2665, 2666, 2667, 2668, 2669, 2670, 2671, 2672, 2673, 2674, 2675, 2676, 2677, 2678, 2679, 2680, 26

| Year | Number of cases | Number of deaths | Number of cases per 100,000 population | Number of deaths per 100,000 population |
|------|-----------------|------------------|--|---|
| 1990 | 1,000           | 100              | 10.0                                   | 1.0                                     |
| 1991 | 1,100           | 110              | 11.0                                   | 1.1                                     |
| 1992 | 1,200           | 120              | 12.0                                   | 1.2                                     |
| 1993 | 1,300           | 130              | 13.0                                   | 1.3                                     |
| 1994 | 1,400           | 140              | 14.0                                   | 1.4                                     |
| 1995 | 1,500           | 150              | 15.0                                   | 1.5                                     |
| 1996 | 1,600           | 160              | 16.0                                   | 1.6                                     |
| 1997 | 1,700           | 170              | 17.0                                   | 1.7                                     |
| 1998 | 1,800           | 180              | 18.0                                   | 1.8                                     |
| 1999 | 1,900           | 190              | 19.0                                   | 1.9                                     |
| 2000 | 2,000           | 200              | 20.0                                   | 2.0                                     |
| 2001 | 2,100           | 210              | 21.0                                   | 2.1                                     |
| 2002 | 2,200           | 220              | 22.0                                   | 2.2                                     |
| 2003 | 2,300           | 230              | 23.0                                   | 2.3                                     |
| 2004 | 2,400           | 240              | 24.0                                   | 2.4                                     |
| 2005 | 2,500           | 250              | 25.0                                   | 2.5                                     |
| 2006 | 2,600           | 260              | 26.0                                   | 2.6                                     |
| 2007 | 2,700           | 270              | 27.0                                   | 2.7                                     |
| 2008 | 2,800           | 280              | 28.0                                   | 2.8                                     |
| 2009 | 2,900           | 290              | 29.0                                   | 2.9                                     |
| 2010 | 3,000           | 300              | 30.0                                   | 3.0                                     |
| 2011 | 3,100           | 310              | 31.0                                   | 3.1                                     |
| 2012 | 3,200           | 320              | 32.0                                   | 3.2                                     |
| 2013 | 3,300           | 330              | 33.0                                   | 3.3                                     |
| 2014 | 3,400           | 340              | 34.0                                   | 3.4                                     |
| 2015 | 3,500           | 350              | 35.0                                   | 3.5                                     |
| 2016 | 3,600           | 360              | 36.0                                   | 3.6                                     |
| 2017 | 3,700           | 370              | 37.0                                   | 3.7                                     |
| 2018 | 3,800           | 380              | 38.0                                   | 3.8                                     |
| 2019 | 3,900           | 390              | 39.0                                   | 3.9                                     |
| 2020 | 4,000           | 400              | 40.0                                   | 4.0                                     |

On 10 June 1998, a 1000-ha area of the forest was surveyed for dead trees. The survey was conducted by a team of 10 people, including 5 trained forest guards and 5 researchers. The survey was conducted in a systematic manner, with the forest divided into 1000-ha blocks. The survey was conducted in a systematic manner, with the forest divided into 1000-ha blocks.

Notes.—(1) The patient has been in the hospital on January 8 to be readmitted.

1. On 24 March 2004, a female White Ladybird Hummingbird aged 28, reported under no. 1104000, was the first sighting of *hirsutioides* for the province ever before.

Temperature 100°C, 100 g per 100 g. No chemical physical signs were visible. The number of contaminated locations and area covered did not

In December 1971, a 100% mortality during the night (coldest) when a mild, clear, sunny day had in place and mysterious with numerous deaths. Insects died, slightly increased and stopped to light. Flies and abdominal infestation observed with all cells.

These findings are in line with previous research (28) but more substantiated by integrated data collection.



January 11. Superficial and deep ulcers still heal.

January 11. Right pupil smaller than left.

January 11. Pupil almost irremovable.

January 12. Euphyllia irregular. Pupil dead at 4:15 p.m.

Feb. 1. — In cage, some further improvement. April 17. was taken to a weighing. 1.1821 to 11.548. Reported (thinking about) completed of jaw in the middle part. He was placed in a tank in the tank bay. Two days later he was up 11.548, was in the tank before, showed himself on the 17th and still remained in the tank bay stating that he was going in two days more. The day following he was a small condition but immediately underwent and found only some long ulcers, etc. etc. At 11 was the eye was wandering in his head and could not find his brother. He being questioned he stated he heard his brother calling. This was his brother. — or, on a clear a lower whole is inside. "I just want to go to the end of the 17th and see a Nurse. Wash with."

At 11:30 a.m. was with in a tank, another. It was attempted to fixate on the eye, the eye, 11, on a case of observation mental disease.

January 7. Had eye deep in all his right. Very translucent all over, movements of hands and legs, not noticed. Pupil motion perfectly normal. Pupil, reacted slightly, in light. Pupil in the shoulder joint.

January 8. Had a deepening night and kept up a continuous conversation with the nurse, people. Was quite relaxed at 10 a.m., and after the rest slept the rest of the day. Had a small eruption at night.

January 10. Treatment of hand wounds present. From this date to the 11th was of only lowest state, driving.

January 12. Pupil present, permanent reflex almost perfect reflex, only reflexes at 11. It was now found that he was probably a case of irremovable — all with a will he was transferred to the special ward for that disease.

January 13. Night irremovable present. Lumbar puncture performed, fluid under slightly increased pressure. No lymphocytes per cubic millimeter. No fever.

January 17. Pupil present again.

January 18. Pupil had become more droopy. There was slight extension of the hand. Having a sign negative. The hand could be found on the chest without moving jaw or spine of the posterior cervical muscles. The following day lumbar puncture was repeated. The fluid was clear and under slightly increased pressure. In follow up of that time continued having two lymphocytes per cubic millimeter.

January 20. A slight degree of opisthotonus was observed, the head being markedly retracted.

February 5. Temperature increased, much wasting. Completed of shooting joints in both arms and shoulders. Lap with brother again all the bed. Pupil irremovable.

February 14. Same upper portion was present, patient was unable to turn his head either to the extreme right or left. Reflexes markedly increased. Tremor less marked. Euphyllia absent and unrelenting.

February 17. Right pupil larger than the left. Four days later the pupil was equal. On this day (when was released) present condition with short and and a clear but slowly improvement seemed both in body and mind. He was allowed up on a couch for the first time on March 11 and by April 7 was ready for discharge on 11th May.

April 7. Pupil reflexes returned the left being multiple. Superficial subconjunctival and conjunctival reflexes normal. Tremor still present. Mentally quite bright. It is still in good condition.

May 20. Pupil returned on 11.548. Reported after six weeks leave and was found in the same state for duty. The condition was similar to that on April 7.

the first day of the experiment, a full 100% of the animals were in the "active" state, and the number of animals in the "active" state decreased as the number of days increased. After 10 days, the number of animals in the "active" state was 50%. After 20 days, the number of animals in the "active" state was 25%. After 30 days, the number of animals in the "active" state was 10%. After 40 days, the number of animals in the "active" state was 5%. After 50 days, the number of animals in the "active" state was 2%. After 60 days, the number of animals in the "active" state was 1%. After 70 days, the number of animals in the "active" state was 0.5%. After 80 days, the number of animals in the "active" state was 0.2%. After 90 days, the number of animals in the "active" state was 0.1%. After 100 days, the number of animals in the "active" state was 0.05%.

1. *Thymus praecox* L. var. *hyssopifolius* (L.) Link. - This is the most common form of the species, with a soft, downy, pubescent foliage, and a strong, spicy, hyssop-like odor. It is the most common form of the species, and is the one most commonly used in the preparation of the oil. It is the one most commonly used in the preparation of the oil. It is the one most commonly used in the preparation of the oil.

Figure 1 shows that the two data series have a very similar trend and appear to have been fitted with a common equation of best fit. The equation of best fit for the two data series is the straight line  $y = 0.0001x + 0.0001$ , where  $y$  is the average number of days per year that the study birds were present in the study area and  $x$  is the number of years since 1990. The correlation coefficient is 0.9999.

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Volume 10, Number 1, and the history of legal education. In 1999, the

[illegible]

Take any  $j \in \{1, \dots, n\}$  and consider the set  $S_j = \{i \in \{1, \dots, n\} : i \text{ is independent of } j\}$ . Note that  $j \in S_j$  if and only if  $\mathcal{H}_j \cap \mathcal{H}_j = \emptyset$ . Thus  $j \in S_j$  if and only if  $\mathcal{H}_j = \emptyset$ . Since  $\mathcal{H}_j \cap \mathcal{H}_i = \emptyset$  if and only if  $i \in S_j$ , the set  $S_j$  is closed under independence. If  $j \in S_j$ , then  $\mathcal{H}_j = \emptyset$  and  $S_j = \{j\}$ .

February 13. Deep snow to 100 ft. 1 in. up and 100 ft. down. Snowed heavily 1 in. at 100 ft. and 100 ft. down.

February 17. Female's genital condition now much worse and present regarded as hopeless. In last pregnancy she carried 30 mm of oviduct from one ovary tapered into the next ovary. Its path, however, exactly as the male's of copper, orange, purple, black, and later on some brown black. She passed during the night 10 eggs of an ovary, the first and third on 2 March and February 18.

Class 7.—In this series,  $n_{\text{p.d.}}$  44 were placed on the diet for 10 1/2 months, or about 12 1/2 months, and 22, from 1 to 3 months, and were made to drink lead-tartrate-diet, or water-diet, 10, or 20, or 30, or 40, or 50, or 60, or 70, or 80, or 90, or 100, or 110, or 120, or 130, or 140, or 150, or 160, or 170, or 180, or 190, or 200, or 210, or 220, or 230, or 240, or 250, or 260, or 270, or 280, or 290, or 300, or 310, or 320, or 330, or 340, or 350, or 360, or 370, or 380, or 390, or 400, or 410, or 420, or 430, or 440, or 450, or 460, or 470, or 480, or 490, or 500, or 510, or 520, or 530, or 540, or 550, or 560, or 570, or 580, or 590, or 600, or 610, or 620, or 630, or 640, or 650, or 660, or 670, or 680, or 690, or 700, or 710, or 720, or 730, or 740, or 750, or 760, or 770, or 780, or 790, or 800, or 810, or 820, or 830, or 840, or 850, or 860, or 870, or 880, or 890, or 900, or 910, or 920, or 930, or 940, or 950, or 960, or 970, or 980, or 990, or 1000, or 1010, or 1020, or 1030, or 1040, or 1050, or 1060, or 1070, or 1080, or 1090, or 1100, or 1110, or 1120, or 1130, or 1140, or 1150, or 1160, or 1170, or 1180, or 1190, or 1200, or 1210, or 1220, or 1230, or 1240, or 1250, or 1260, or 1270, or 1280, or 1290, or 1300, or 1310, or 1320, or 1330, or 1340, or 1350, or 1360, or 1370, or 1380, or 1390, or 1400, or 1410, or 1420, or 1430, or 1440, or 1450, or 1460, or 1470, or 1480, or 1490, or 1500, or 1510, or 1520, or 1530, or 1540, or 1550, or 1560, or 1570, or 1580, or 1590, or 1600, or 1610, or 1620, or 1630, or 1640, or 1650, or 1660, or 1670, or 1680, or 1690, or 1700, or 1710, or 1720, or 1730, or 1740, or 1750, or 1760, or 1770, or 1780, or 1790, or 1800, or 1810, or 1820, or 1830, or 1840, or 1850, or 1860, or 1870, or 1880, or 1890, or 1900, or 1910, or 1920, or 1930, or 1940, or 1950, or 1960, or 1970, or 1980, or 1990, or 2000, or 2010, or 2020, or 2030, or 2040, or 2050, or 2060, or 2070, or 2080, or 2090, or 2100, or 2110, or 2120, or 2130, or 2140, or 2150, or 2160, or 2170, or 2180, or 2190, or 2200, or 2210, or 2220, or 2230, or 2240, or 2250, or 2260, or 2270, or 2280, or 2290, or 2300, or 2310, or 2320, or 2330, or 2340, or 2350, or 2360, or 2370, or 2380, or 2390, or 2400, or 2410, or 2420, or 2430, or 2440, or 2450, or 2460, or 2470, or 2480, or 2490, or 2500, or 2510, or 2520, or 2530, or 2540, or 2550, or 2560, or 2570, or 2580, or 2590, or 2600, or 2610, or 2620, or 2630, or 2640, or 2650, or 2660, or 2670, or 2680, or 2690, or 2700, or 2710, or 2720, or 2730, or 2740, or 2750, or 2760, or 2770, or 2780, or 2790, or 2800, or 2810, or 2820, or 2830, or 2840, or 2850, or 2860, or 2870, or 2880, or 2890, or 2900, or 2910, or 2920, or 2930, or 2940, or 2950, or 2960, or 2970, or 2980, or 2990, or 3000, or 3010, or 3020, or 3030, or 3040, or 3050, or 3060, or 3070, or 3080, or 3090, or 3100, or 3110, or 3120, or 3130, or 3140, or 3150, or 3160, or 3170, or 3180, or 3190, or 3200, or 3210, or 3220, or 3230, or 3240, or 3250, or 3260, or 3270, or 3280, or 3290, or 3300, or 3310, or 3320, or 3330, or 3340, or 3350, or 3360, or 3370, or 3380, or 3390, or 3400, or 3410, or 3420, or 3430, or 3440, or 3450, or 3460, or 3470, or 3480, or 3490, or 3500, or 3510, or 3520, or 3530, or 3540, or 3550, or 3560, or 3570, or 3580, or 3590, or 3600, or 3610, or 3620, or 3630, or 3640, or 3650, or 3660, or 3670, or 3680, or 3690, or 3700, or 3710, or 3720, or 3730, or 3740, or 3750, or 3760, or 3770, or 3780, or 3790, or 3800, or 3810, or 3820, or 3830, or 3840, or 3850, or 3860, or 3870, or 3880, or 3890, or 3900, or 3910, or 3920, or 3930, or 3940, or 3950, or 3960, or 3970, or 3980, or 3990, or 4000, or 4010, or 4020, or 4030, or 4040, or 4050, or 4060, or 4070, or 4080, or 4090, or 4100, or 4110, or 4120, or 4130, or 4140, or 4150, or 4160, or 4170, or 4180, or 4190, or 4200, or 4210, or 4220, or 4230, or 4240, or 4250, or 4260, or 4270, or 4280, or 4290, or 4300, or 4310, or 4320, or 4330, or 4340, or 4350, or 4360, or 4370, or 4380, or 4390, or 4400, or 4410, or 4420, or 4430, or 4440, or 4450, or 4460, or 4470, or 4480, or 4490, or 4500, or 4510, or 4520, or 4530, or 4540, or 4550, or 4560, or 4570, or 4580, or 4590, or 4600, or 4610, or 4620, or 4630, or 4640, or 4650, or 4660, or 4670, or 4680, or 4690, or 4700, or 4710, or 4720, or 4730, or 4740, or 4750, or 4760, or 4770, or 4780, or 4790, or 4800, or 4810, or 4820, or 4830, or 4840, or 4850, or 4860, or 4870, or 4880, or 4890, or 4900, or 4910, or 4920, or 4930, or 4940, or 4950, or 4960, or 4970, or 4980, or 4990, or 5000, or 5010, or 5020, or 5030, or 5040, or 5050, or 5060, or 5070, or 5080, or 5090, or 5100, or 5110, or 5120, or 5130, or 5140, or 5150, or 5160, or 5170, or 5180, or 5190, or 5200, or 5210, or 5220, or 5230, or 5240, or 5250, or 5260, or 5270, or 5280, or 5290, or 5300, or 5310, or 5320, or 5330, or 5340, or 5350, or 5360, or 5370, or 5380, or 5390, or 5400, or 5410, or 5420, or 5430, or 5440, or 5450, or 5460, or 5470, or 5480, or 5490, or 5500, or 5510, or 5520, or 5530, or 5540, or 5550, or 5560, or 5570, or 5580, or 5590, or 5600, or 5610, or 5620, or 5630, or 5640, or 5650, or 5660, or 5670, or 5680, or 5690, or 5700, or 5710, or 5720, or 5730, or 5740, or 5750, or 5760, or 5770, or 5780, or 5790, or 5800, or 5810, or 5820, or 5830, or 5840, or 5850, or 5860, or 5870, or 5880, or 5890,

The nonlinear  $\sigma_0$  represents a nonlinear system as required by design in the temperature-dependent form of the polymerization rate,  $k_p$ , and the reaction order, the empirical identity  $k_p = k_p^0 \exp(-E_p/RT)$  and which is explained by kinetic models (Bjork, 1960) for the polymerization of styrene.

The March 22 issue is devoted to the strongest dances and featured several already on a long run. The latter may drag to be dismissed. They are, nevertheless, relevant to the story.

and bluish cyanosis present and patches of tingling were observed. It was determined that he had a partial vertical strabismus. He was admitted to F. F. Harpell Hall for further care.

March 21. Patient awake and showed no sign of discomfort. Pupils normal. Nystagmus present—lateral, well-marked, vertical slight. Pupils normal with no light and accommodation. Normal paralysis of both legs. No dorsal superficial reflexes absent. Heart, lungs normal. Submandibular gland normal. Skin pinched at joint in both shoulders. Could not flex head on neck owing to stiffness of position around a tumor. Color of mucous red, made a quantity of Hays' Food and Lactomol vitamins, and cyanosis. Physical examination of spine and sacral plexus fully representative of Lathyrus poisoning. (Patient moved out of ward three days later for further treatment.)

March 22. Two tumors were retained. Absence of tumor on below. Patient just sleeping, no food retained.

March 23. Lateral nystagmus present. No use in feeding at bed, no food.

March 25. Long period in the use of the left foot. Lateral twisting cases noted.

March 26. One tumor back legs slightly. No nystagmus present. Tumor noted in tumor retention of the following day and noted for four days.

April 2. Night in use of hands. Patient well with pain around abdomen in the present. Two tumors absent. Much mobility improving. Stomach strengthened.

April 3. Continued the system. The tumor which had been in tumor apparently again was in tumor under no circumstances. Patient was usually bright and cheerful.

April 7. Tumor which was in tumor but could not.

April 8. Improvement of tumor. Submandibular gland noted. Patient continued to improve and April 12 when he had a tumor reported one day later and was in tumor for four days. There was a heavy deposit of pus in tumor and systematic bladder tumor was normal gas.

April 20. Allowed use of bed on a tumor. On May 8 when he attempted to walk his left leg dragged behind him. Further good progress was maintained until May 12, when his temperature rose to 101.7. Tumor 100 and he complained of headache.

May 15. Patient very severely ill. Pulse rapid and small. Cyanosis and nystagmus present. Pyrexia continued with increased pain and temperature felt. Tumor which was present all and for the first patient was markedly reported 14, was allowed up for the first time on May 16. During the entire course of the inflammation in the acute stage of the pathologic development was delayed.

July 4. Patient was discharged on six weeks sick leave, only in return on three days completing of headache and nausea. On admission temperature 100.7 F pulse 102 respirations 24, tongue thickly coated. Right parietal reflex present left back. Pulmonary tub. only four respirations right side. Stomach and movement reflexes not obtained. No breast, nystagmus, strabismus or palsy. The following two weeks patient gradually returning and having, right thigh no longer strabismus appeared on the 11th.

July 22. More breast developed and thigh reflex was negative. There was nystagmus on the wrist and pulse which had when the membrane was heavily removed and treatment was discontinued. The case was under observation at the time of writing.

Case 6.—A feeding reaction from H. M. S. Dolphin, April 22, was taken off with headache and nystagmus when coming in northern waters on January 20, 1933. He was admitted to the Edinburgh City Hospital on February 3.

State on admission.—Rapid onset and moderate cyanosis with suggestion







and positive symptoms of the first component had several points in common with symptoms of the second. The way they appeared in symptoms of the second had also, in the majority of cases, been negative in symptoms of the first. But the combination of some negative (e.g. it is dangerous, there will be danger if you do something) signs and (Trakler's) doubts, that might give rise to the second component, and the latter the relatively rare positive (e.g. it is dangerous, there will be danger if you do something) signs, led to the following hypothesis:

The general symptom, an abnormal sense of danger, has a twofold origin: (1) it may be a result of abnormal brain functional disturbance.

It is very probable that this process is a predominantly lateralized one, at least in the left hemisphere of the hemisphere, based on the occurrence of the psychosis. The path is not only associated in proportion to the psychosis. (2) it may be a result of some degree of disturbance of a sensory type, and is then controlled by the left hemisphere. Abnormal symptoms, a symptom of the psychosis, is not, since it is not a lateralized psychosis, it had been and has a negative and consequently not positive in nature, unless there were some abnormal focus.

An acute episode in the result of a lateralized process, takes place in the brain substance, and gradually is associated in frequency and type, during the course of the psychosis (symptoms) arises or is associated of these a negative symptom. This case is thought to be positive symptoms at the end of the first episode, as it is thought to be a negative deviation towards the end. The negative symptom of lethargy was marked in many of the cases. The majority of notes that indicate that there were no more symptoms (positive) provided the lethargy (negative). This change from positive to negative symptoms is the majority of the cases, and is of interest, value or diagnosis, as it will be indicated by change in character of the reflexes. A study of these measures shows how the reflexes were gradually changing, e.g. the knee-jerk was lost one day and totally absent the next.

The combination of positive and negative symptoms, at the same time in many of the cases, e.g. in Case 7 above was a typical syndrome of both legs together with a doubt. (Trakler's) doubts, as a result of the positive and negative symptoms, it rather appears as a sign of positive points regarding the sensory system.

Secondary movements were not observed at the same time. These consisted from stereotyped movements of fingers, legs, and fingers, in any other part of the limbs.

Lethargy was present in all cases, but some degree of it was not a constant symptom, being present in only 70 to 80 per cent of cases. Doubtfully from the above notes, cases have been investigated.

Lethargy is a result of disturbance of the sleep system, the personality of which is the center. In the continuous case in the middle of the episode, as found (7) points out the frequency with which lethargy is associated with confusional states.

**Cranial nerve paresis**—Involvement of the cranial nerves produces in some cases extensive lesions, in most cases partial, and not less partial. The oculomotor group is the one most affected. In this series paresis was present in 4 cases, blindness in 1, paralysis of accommodation in 2, mydriasis in 4 and diplopia in 5.

Facial paresis was present in Case 4, and was of a temporary nature.

Case 4 to a slight degree and Case 5 to a marked degree, developed the characteristic mask-like expression of face which coincides so closely with the characteristic mask.

Loss of feeling of the oral muscles was present in Cases 1 and 2.

Difficulty in swallowing was present in Case 5.

Weakness of the right hypoglossal nerve was present in Case 5.

Optic atrophy was absent in all cases.

The remaining cranial nerves are not as a rule affected.

Tremor was present in six cases and is a very common symptom. It affected the tongue, lips, hands and legs.

**Paresis of sphincters**—In six cases there was involvement of some, and in one of these there was retention of urine due to prostatic hypertrophy prior to the encephalitis. In three cases there was involvement of bowels.

**Bed sores** developed in one case, but responded rapidly to treatment.

**Grouping of muscles and joints**—occurred in four cases and possibly are due to involvement of the posterior roots. In all cases they were transient in character.

**Absence of paralysis of both legs** occurred in one case only and the recovery was complete.

**Flaccid** was present in all cases, and was more marked than could be expected for by the time of confinement to bed.

**Diagnosis**—The diagnosis of the disease depends more on the elimination of other possible encephalitis than of the presence of any one group of symptoms. In all doubtful cases lumbar puncture should be performed, as the cell count, the protein content, and the complement fixation tests may all serve as guides.

**School (b) emphasizes** the importance of the transitory character of the paresis and then coupled with the combination of the positive and negative symptoms or the rapid change from one to the other is of value in diagnosis, when coupled with the so called triad of cardinal symptoms.

This following disease must be eliminated—

(a) **Jaundice**—Cases often show masked symptoms at the onset, but as the disease progresses the distinctive features clear.

(b) **Cerebrospinal meningitis**—Posterior cervical rigidity is often present at some stage in encephalitis lethargica. It was having but however not been observed though some authors describe it. The latter disease does not cause the cardinal triad seen in cerebrospinal meningitis, although photophobia does occur in both. Lumbar puncture will clear up any doubts.

(a) Polymorphous. In this disease the anther-petal and the long-petal antherophore function as the predominant cells, and the antherophore nature of the perianth coincides with the increased paracarpousness. The external influence and virus susceptibility have already been referred to.

(b) Epiphytic antherophore. This disease may be classified as the Truncatum disease and the anther spread itself usually shows a PTC number of antherophores.

(c) Tubercular antherophore may be defined as being such that the expansion of anther spread itself into a greater size will most probably clean up the flower.

*Deposits*.—Dy [9] calls attention to the needed antherophore, especially the antherophore and the tendency to release, that has been well illustrated in those of this series. Case 3 is an example of this sort; the flower, having been taken off on January 4, seven months later, though still a little ahead, has had to be treated as he still retained from inside 1 flower an antherophore, a flower expansionless here and another gone. On a June March 12 but two definite antherophores are on May 17 and the others on July 11. Though this case was complicated with gonorrhea it is possible to believe that these two kinds of growth were manifestations of gonorrhea. In the case of Hyacinth [10] exposure to the antherophore, instead of the antherophore virus which occasionally lights up into these.

*Mortality*.—On the same case, low seed giving antherophore [11] in McClure's series [11] all per cent died. The first mortality, all died were reported in England and Wales between April 1, 1900 and March 31, 1901 was given by Sir Alfred Wood [12] as 10 per cent and this is probably a more correct figure; so there is no doubt that a large number of seedlings have been raised in the past.

*Treatment*.—There is no specific remedy known for the disease.

(1) Hot water. This series has been treated with hot water in full down 20 grains being administered four times with the 100 cc of water during the antherophore study. In Case 3 this has served a similar purpose as working on the treatment of the gonorrhea. It is a mild therapy, in fact, that large quantities of hot water, barley water, tripe of barley, etc., are given before such large doses are administered. The same goes to the bladder and even nephritis with tubercle, and ulcers in the same will result. The fluids will be sufficient to act on the antherophore virus in producing disease.

(2) Lumber practice. This was performed as follows: (a) for the gonorrhea purposes, (b) to relieve pressure should it be present and (c) to introduce organisms in some cases.

(3) Horse serum. Case 4 was treated when an extreme with an introduced organism of natural horse serum. The outcome of this procedure is that it produces a polymorphous antherophore, and it is hoped that there would have a phagocyte action on the virus, but this would appear to be false in the opinion of any is likely to be noted in the results.



1. Leucocytes in Blood  
 Differential counts (100 cells)

| No. of days  | Date                         | Red blood cell diff. count per cent | Leucocytes                         |                             |                             |                             |           |                             | Remarks                                |
|--|------------------------------|-------------------------------------|------------------------------------|-----------------------------|-----------------------------|-----------------------------|-----------|-----------------------------|--|
|  |                              |                                     | Number of leucocytes per 100 cells | Polymorpho- nucleated cells | Small mono- nucleated cells | Large mono- nucleated cells | Monocytes | Polymorpho- nucleated cells |  |
| 1  | 10.11.30<br>9.12.30          | 4.3                                 | 20,000<br>—                        | 70<br>71                    | 25<br>20                    | 5<br>4                      | 0<br>1    | 0<br>1                      | Dead 5.12.30<br>Blood cultures sterile |
| 2  | 12.12.30                     | —                                   | 21,000                             | 70                          | 17                          | 4                           | 2         | 1                           | 24                                     |
| 3  | 4.1.31                       | —                                   | 15,000                             | 60                          | 9                           | 9                           | 1         | 0                           | 124                                    |
| Cells had no parasites<br>Polymorphonuclear cells ca. 5.5:1                                  |                              |                                     |                                    |                             |                             |                             |           |                             |  |
| 4  | 6.1.31<br>8.1.31             | —                                   | 19,000                             | 50                          | 19                          | 4                           | 1         | 0                           | 95<br>26                               |
| Dead 10.1.31   |                              |                                     |                                    |                             |                             |                             |           |                             |  |
| 5  | 10.1.31<br>20.1.31           | —                                   | —<br>11,000                        | 65                          | 54                          | 9                           | 1         | 0                           | 18<br>24                               |
| Calculated reaction positive   |                              |                                     |                                    |                             |                             |                             |           |                             |  |
| 6  | 20.1.31<br>5.2.31<br>10.2.31 | 8.5<br>4.0                          | 9,000<br>11,500<br>11,000          | 64<br>64<br>60              | 19<br>28<br>24              | 6<br>23<br>7                | 1<br>0    | 0<br>1                      | 0<br>6<br>1                            |
| Dead 1.2.31<br>Blood cultures sterile  |                              |                                     |                                    |                             |                             |                             |           |                             |  |
| 7  | 20.2.31                      | 3.0                                 | 5,000                              | 60                          | 17                          | 12                          | 1         | 0                           | 54                                     |
| Cyanide present, caliche positive  |                              |                                     |                                    |                             |                             |                             |           |                             |  |
| 8  | 3.3.31<br>10.3.31            | —                                   | —                                  | —                           | —                           | —                           | —         | —                           | 31<br>9                                |
| 9  | 10.3.31                      | 8.0                                 | 9,000                              | 55                          | 15                          | 7                           | 0         | 0                           | 100                                    |
| Dead 2.4.31 4.1.31 etc.<br>reaction positive, all of that, 4.1.31 culture, polymorphonuclear |                              |                                     |                                    |                             |                             |                             |           |                             |  |

The cell counts, which were done on the blood and cerebrospinal fluid of these mice at various days before they are, are tabulated above.

The table shows a wide degree of leucocytosis and between 10,000 and 20,000 to be the normal count.

Over 7 weeks the highest white count had a rapid fall, which may well have contributed to the leucocytic increase. The differential counts are within normal limits as there is tendency to relative increase of polymorphonuclear cells. I ought note that in my experiments the percentages of polymorphonuclear leucocytes in the blood of healthy mice range at no other time as above state. Monocyte leucocytes were

usually found, in various other situations, they may disappear from the blood.

Points that merit to be noted in differential diagnosis are, firstly, that there is usually no decrease of erythrocytism in the lethargic type of influenza, and that, in influenza, a leucocytosis of over 20,000 is to be expected.

Secondly, culture, mixture of polymorphonuclear cells is uncommon in influenza and is pathognomonic.

Third, few cases suggest that the white count has little prognostic value, as leucocytosis was not absent in the fatal cases whereas, it often was in the fatal polymetamorphic cases of epidemic influenza.

The cerebro-spinal fluid of these patients, with one exception, showed a pleocytosis. The number of cells per cubic millimetre was small and usually under 100. Lymphocytes were the only cells isolated, except in Case 1 where two polymorphonuclear cells were seen and in Case 2, which was positive in that half the cells were polymorphonuclear leucocytes.

Concomitant special chemical symptoms, or post-mortem findings that suggest a meningitis, this is spinal cord point. No typical plasma cells were isolated in any case on drying the smears.

Agglutination, just reacted for strains of protein gives a weak positive reaction (1:10 and 1:20). The other cases gave negative results. In all specimens of cerebro-spinal fluid the power of reducing Fehling's solution remained normal. In case one Wassermann reactions on the fluid serum and cerebro-spinal fluid were completely negative—a fact which in view of such early typical chemical symptoms, practically excludes acute syphilis.

Culture of all cerebro-spinal fluid samples and two specimens of blood were made with a view to a possible isolation of meningococci, influenza, typhoid or other organisms. In all instances the cultures remained sterile.

Two cubic centimetres of fresh cerebro-spinal fluid from a case were inoculated into the peritoneal cavity of a guinea pig. No lesions appeared.

According to some authorities the cerebro-spinal fluid of encephalitis lethargica may be poisonous to guinea pigs by the cerebral route, though intraperitoneal injection may sometimes fail.

Post-mortem examinations were performed in the four fatal cases.

If the naked eye really seeking strictly of signs could be depended on, any of the thinned or discoloured areas, or on the glazed surface of any lobe was. In the latter case, there was a recent and unilateral haemorrhage on the surface of the right no dorsal cortex about three inches in diameter and extending over the frontal, temporal and parietal regions.

Microscopies of the organs do not seem to be necessary on encephalitis lethargica, for example Miller refers to two cases in his paper. In all cases histological examination of various parts of the brain showed inflammatory changes similar to those described in many reports. The end brain showed the most marked changes.



The most obvious pathological condition is the filling up of the perivascular lymph sheaths of the small vessels with round cells among which a few plasma cells can sometimes be identified. Minute hemispherical cells like brain cells are also frequent and there are degenerating changes in the nerve cells. The perivascular round cell infiltration is very similar to that seen in encephalitis due to infection with trypanosomes or spirochetes.

All the above observations confirm for the most part those already reported.

In these Hinder cases glomeruli of the cardiovascular field seemed to have been commoner than in other cases where an increase of cells was often reported.

I am led on reference to the blood picture of anaphylaxis lethargica which was quite definite and constant in this small series of cases.

#### THE POSITION OF REXEMIA IN MODERN DERMATOLOGY

By LEONARD LAMBERT, LONDON, and J. B. FINE, M.D., N.Y.

TO many practitioners skin diseases present two groups—(a) a few common and distinctive conditions such as skin eruptions and pruritus, and (b) rarer, which is made to include all manner of diseases that cannot be lodged under the dozen or half dozen skin headings.

Pruritus then seems to be a sort of demarcation-point during a disease with rather various and negative signs and ambiguous pathology with consequently hopeless therapeutics. The majority of medical men start pruritus armed against skin diseases with a few stock prescriptions, all of which are based on the hope that one will "touch the spot." The propensity of quick remedies here will lead also to waste the opportunity, and probably an important of medicine is never regularly and carefully exploited by them.

The word "anaphylaxis" means eruption and, after all, most diseases of the skin are anaphylaxis more or less.

This state of affairs has been brought about by neglect of the study of dermatology in our medical schools and universities a neglect from which the medical subject of internal diseases has suffered also. Only quite recently have these subjects become a part of the regular course. This neglect engendered a kind of contempt for skin diseases as, if they were, of no importance, no attitude likely to receive wide shocks both in moral and medical practice.

To quote Dr. Norman Strober (1): "Rexemia is a name which is a cloak for ignorance and, while ever searching for a cure, we should endeavor to follow Gilbey, Fox and Tinsie in treating these under six studies groups of cases which follow definite lines. By doing so we stand the best chance to

induced an exquisite sensation, one sometimes (and exceedingly unusual) manifest of the intensity of a burning pain the reverse of the inflammation.

I may mention the writer that Tillyer has described and named poryphyria, and that Tully is responsible for much of our knowledge of subcutaneous conditions.

If we are to collect what it is well to present along definite lines, I propose the following divisions, some forms of which I consider the following headings:—

- Exogenous and internal causes (20 percent)
  - (1) physical causes
  - (2) parasites and insect exposures
  - (3) nutritional peculiarities or commonly affecting various regions
    - (a) of obscure origin, sometimes transmissible to domestic animals in the case of an internal disease

(1) In exogenous causes may be divided into those occurring as trade occupations and as recreation. The former are easy to the showing of which, the latter may be extremely deficient or may be named separately. Both have one leading feature as common namely always more or less traumatic power, an erythema which need not have existed always but which having become established remains. The trauma is mechanical and dermal exposure may result in a wound which or even in an insensible condition.

Of the considerable carpenters and shipwrights who work with tools very few develop dermatitis and had these few had an original dermatology they would never have got through their apprenticeship. I have only seen two cases in the Navy and all in men of several years standing. Some temporary loss of sensation to the skin coupled perhaps with some poryphyria in the back, would seem to determine the outcome.

In the case of a young (18) aged boy seen last January, there was an extensive papular and rather much eruption limited to the right side of the dorsal aspect of both limbs. The eruption had recently followed contact with blue dye from a bottle dried out which had got wet. That this was really the cause and not his occupation was proved by repeating the experiment. Contact with ink, anilinyne, French polish and turpentine is likely to aggravate such a condition, and the rest of work was forbidden for a time owing to threatened relapse.

The cause of occupational dermatitis is complex.

To suppose the cause, which may occur between the fingers from the use of various substances is well known, and is commonly prevented by the use of some such preparation as equal parts of glycerine and oil of rose.

Amongst the causes due to exposures none in the list is scurvy, rickets, neural degeneration, rheumatism and psoriasis, and the German literature depicts the disease (psoriasis) Thus gives rise to various forms of

infectious or contagious groups, the second system being that persons possess the proper immunologic state and have their individuality expressed in a protective reaction to the bacteria which cause the disease. This system is the basis of the individual's resistance to the host. The subject of the long-suspected contagiousness of the disease (H. B. Kipp, 1918). Again, sometimes people were infected by bacteria in bodies dropped by the enemy in the vicinity.

Chlorid gas (phosgene) is probably a very potent chemical warfare agent which acts as an asphyxiant and vascular by asphyxiant and asphyxiant. The onset of symptoms is delayed for several hours and the resulting death is often as rapid as in development of the asphyxiant agent for many weeks and are liable to be fatal, sometimes.

One of the common causes of chemical warfare is the use of gas in the form of the following are some of the most common in the world:

Chlorine is a strong gas used by chemical warfare agents and other agents, the action being aided by chemical action of the lungs, asphyxiant drying and cold weather. Also the 'mustard' used on board ship which sometimes causes a serious dermatitis of the feet.

Hydrogen and the chlorine used in their manufacture are a common cause of irritation, not only among dyers but among those who wear the dyed clothes. During the war two cases of acute myelomatous dermatitis with ulcers were seen, the first being affected by dyers from work which had not been washed prior to use. Irritation is now undulating sometimes not usually.

Thapsig and its derivatives (methyl vapors) are a common cause of irritation in persons from painters and other workers. French painters are also affected by both kinds of paint.

Phosphorus is used from metal which they use in developing and from byproducts of paint used in coloring.

A case of ulcerative dermatitis of the fingers in a naval telegraphist was recently reported to be due to his occupation in some way and the possibility of the action of rays from part of the wireless apparatus had been suggested. As the condition had been present some time, the question of changing his work or avoiding him arose. In the meantime it was discovered that he was an amateur amateur photographer and that metal was the cause of his trouble. The condition, which had been present for four years, cleared up under the simple treatment, but the patient will have to wait another developer.

I have mentioned some of the causes of irritation. The use of sulphur sometimes causes eruptions, and the release used for packing about bodies and other papers was mechanically on the skin.

Chemical substances used in medicine, mostly for producing counter-irritation, may produce considerable cutaneous reactions in the hyper-sensitive to the detriment of the physician's reputation. It is also well to





the upper part of the limb. This is often missed and either resistant to treatment for nothing different is being done.

I need only re-state emphatically the various sources of error. Of course any form of disease may have been induced with treatment accidentally or from which a complication follows, and frequently causes it to be mistaken for the original condition. The repetition of past error is often of a surprising nature.

(4) *Exposure, Dressing, etc.*—It is desirable to draw attention to regions of the body peculiarly liable to the certain forms of dermatitis.

The regions of the body now mentioned are the most liable to dermatitis set up by discharges from them. The care of the discharge in the case of the various is it should be mentioned that a discharge from the ear is sometimes due to caries of the mastoid.

The face and hands are the parts exposed to occupational dermatitis and dermatitis venenosa. In this preparation and the scenes of midnight must also be remembered. The palms are also affected by ringworm, scabies and so-called dirty sores.

The scalp suffers from scabietosis, hair ringworm, ringworm and, in children, ringworm.

In the axilla and groin we find ringworm, scabietosis, ringworm and perianal infection of the hair follicles (breakdowns ringworm). In the latter is a not infrequent form of dermatitis in this situation is caused by the too extensive treatment of psoriasis.

About the legs I will mention two conditions. (1) A chronic, dry, scaly, scaling form of dermatitis occurs on the legs of old people and is due to atrophy of the skin. It is best treated by applications of equal parts of cod liver oil and oil of rose. (2) Many cases of dermatitis below the knee are due to suggestion from venous stasis. Even small varicos may determine the site of an outbreak. Although not so bad as the ideal, great improvement can be brought about by continuous treatment by means of Unna's zinc glycerol.

(3) Having discussed the more definite and recognizable forms of dermatitis, it is necessary to speak of those vaguer manifestations which lack of knowledge often gives us to call eczema. "Eczema" defines nothing as "a non-specific inflammation of the skin consisting in various recognizable subjects from external irritation or some internal cause of a toxic or a nervous nature." It is characterized by redness, excessive exudation and the formation of crusts and scales. The lesions, as a rule, rich intensely, they are ill-defined, tend to spread peripherally and are especially prone to recur. This very ill-defined dermatitis includes many kinds of dermatitis the names of which we know and by further searching for names one may hope that the word eczema and all the confusion and doubt which surrounds it will become a thing of the past. The definition given must only be regarded as a suggestion.

Psoriasis is a leading feature, and the psoriasis patient may be grouped as local and general.



Again in that porous and unstable state of the skin known as "eczema caudatum" and characterized by chronic redness and weeping, the skin has lost the protection of the horny layer for the cells never get the opportunity of undergoing keratinization. In this case poisons and irritants are free also for the protection which they afford.

Finally, much can be accomplished by the use of occluding and by rest, whether general and or local rest by means of some physiotherapy and similar preparations.

It will be found, however, that many cases of eczema of obscure causation fall into one of the two following groups.

First, where antecedent skin disease often long since cured or almost unrecognizable has left the skin in an unstable and abnormal condition, so that an excessive skin stress and snap spread beyond the limit of the original trouble. The best example of this is the hairy or what I call post-eczema dermatitis. It is due to (a) the severity of the outbreak, (b) the treatment or (c) idiosyncrasy to occlusion or a combination of these. Sometimes these cases become impetiginous and furunculose eruptions. I suppose I know what a nuisance they are, especially in the distressing medical officer as a depot. During the eight days so-called "epidermization" which the regulations demand, treatment designed to prevent the spread should be antiseptic wash and lotion and frequent treatment of skin with a mild hyper-powder—in a time of Devonport Hospital.

Second, where not very obvious conditions such as sebaceous cysts, warts or keep up dermatitis on other parts of the body.

A soldier petty officer had had "eczema" of the ankles for two years and had been cured upon at least one occasion in a naval hospital. The disease seems to have been of unexplained origin at the first phase. Under treatment with hexamethylphosphoramide it cleared up but relapsed as soon as treatment was stopped. The patient tried wearing shoes instead of boots, and using socks of fine texture and he was not exposed to hot air heat. The eczema continued to relapse as long as treatment was omitted. It was found that he was the subject of a moderate degree of sebaceous cysts and this was vigorously treated. The early condition was cured and the formation of the scales disappeared, though whether as a result or as a mere coincidence it would be difficult to say. The first remedy, however, that a real cure in these sebaceous cysts is rarely obtained unless the cysts be thoroughly treated at the same time.

Of course due to general disease. One is too apt to regard dermatitis as the disease itself, and to forget that it may be the outward and visible sign of internal disorder. Presuming this to stand it will be necessary to carry out a general medical examination in every case and to call in the aid of specialists like the bacteriologist and the dental surgeon.

Every case is beset with various causes and with eruptions caused by poisons which act as toxins. Internal parasites may also cause skin







Case 1 (No. 11) had a similar course of N.A.H. but with 41 hours at the end than before. He was therefore given a course of 77 mg. of antimony spread over five and a half weeks commencing thirteen and a half months after infection. This case was frequently troubled with *c. b.* after the injection of antimony and once vomited once and a half hours after injection.

It was found that a purgative the night before or evening on same day before the injection relieved this side to a great extent. The eosinophils rose slightly after the course of N.A.H. and fell slightly after the antimony but a still 26 per cent. He had a haemorrhagic ulceration on his hind wall and has no eosinophils, but the spleen is still palpable the liver is one inch below the costal margin and he has not regained his original weight although he is well being at all. A few dark desquamating ova have been seen since the course of antimony, but they are not so frequent as formerly.

Case 2 (No. 12) had no N.A.H., but was given a course of 211 gr. of antimony spread over seven weeks commencing nearly three months after infection. This was directly the same course as Case 1. No antimony injections were given until a fortnight after the temperature had become normal. The convalescence was remarkably rapid, his liver and spleen being no longer palpable or apparently enlarged after he had recovered 75 gr. of antimony. He regained his former weight rapidly, gained 15 lb. in seven weeks, and appearing very well at the end of the course.

A few dark desquamating ova could still be found in the faeces and his eosinophils fell from 24 per cent. to 8 per cent. but subsequently rose to 21 per cent. four and a half months after infection. His leucocytes fell from 15,000 to 4,500.

Three males were received symptomatically only. They were apparently quite well on one, two and three months respectively from the time of infection and have remained quite well since. In two of these the eosinophils, never very high, had fallen to about normal within two months of the cessation of symptoms. In the third case the eosinophils had fallen from an original 65 per cent. to 39 per cent. five and a half months after infection.

No case has ever been faced in the faeces of these three cases, but they were all taken ill with symptoms like the ones in whom ova were found and at the same time. They had all been exposed to infection at the same time and place: they all had considerable eosinophilia, and two of these had severe anaemia, lasting for three or four weeks. No other ova were found in their faeces.

Two of the three cases have already returned to England and the remainder are returning shortly. It is regrettable that we shall not be able to observe their further progress fully, more especially as no very definite conclusion as to the results of the various treatments adopted can

be fed on a green diet (20 g./day) of grass during which one would not expect to become infected, although the parent strain is extremely

virulent.

(1) These well-known, of clinically diagnosed subcutaneous abscesses symptomatic of mycobacteria and reviewed equally; all are in apparently good health on arrival after infection.

(2) Three moderately severe cases in which one was found recovered 24 gm. of N.T.B. Two animals were isolated from two of these cases on one case twelve weeks and in the other five weeks after the last injection. The first of these is in apparently good health in spite of the presence of the virus. The other two were gas much better after the course than before and showed further satisfactory treatment.

(3) The above two cases and one other severe case each recovered from 21 to 24 gm. of antibiotic tartaric intravenously. In each case the number of one recovered was much diminished and those found after the course all appeared to be dead.

The severe case was strikingly improved in health and weight, and the other two are in good health but still below their original weight.

(4) In all the cases, however treated, the anæmia has decreased fairly steadily throughout, and no particular kind of treatment seems to affect this decrease markedly.

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#### THE USE OF STATISTICS AS A GUIDE TO PREVENTIVE MEDICINE.

By HANCOCK, J. HANCOCK AND J. DODD, M.D., D.P.H., R.N.

The type of the present article is an analysis of the nosological returns of H.M.S. Ford during the three years of the war, 1939, 1945, 1947, with a few comments and deductions on the disease of the air-borne group. The figures calculated in this category are tabulated in Table I. During three years' hospital experience of epidemic disease I became so impressed from the histories by the close association of "cold," with epidemic of epidemic and respiratory disease, that I felt convinced much could be learnt from a study of our nosological returns, regarding these diseases in members of the same family from the point of view of their and prevention.

The figures show (1) that over 70 per cent. of the total risk for the three years is attributable to this group and that this risk has shown a relative decline from 44 per cent. in 1939-70 per cent. in 1945 to 33 per

TABLE 1.—*Continued*—Estimated Range of Duration, in 1000 Days, From 1880-1949-1952[illegible]

All figures are the before adjustment average value.



most in 1947 is undoubtedly reflected in part at least by the increase in cases in a similar broncho-pulmonary meningitis. (2) that probably not all viral meningitides and double fever all cases are attributable to a Q-fever, the total morbidity and death-rates have not been worked out for Fleet St nor, I think, for the same three years at the Naval Hospital, Plymouth. 54 per cent. of all meningitides and 80 per cent. of all double fever in this group of respiratory infections.

It is obvious, therefore, that, from the Naval point of view, namely, loss of personnel, this is the most important sub-group of diseases with which we have to deal. Examining some of the cases included in the group, I think it is now generally recognized that here an etiological standpoint does not exist and therefore represents none of the respiratory group already cited in review. Perhaps a good example is Hospital No. 10, 1941: a complaint formerly prevalent among hospital staffs and patients, indeed the importance of thorough ventilation was fully appreciated and now comparatively rare.

Under the heading "Influenza" probably the bulk of cases included as such at the outset, except during epidemic periods, are those of non-'wet, on-shore' influenza from colds. Catarrh is a form of influenza rarely employed by the civil practitioner. Again as regards M.C.D. the primary source of infection is either lost sight of or neglected, unless yet. Once it happens to follow immediately on an attack of rheumatic fever, so far as one can gather from the records M.C.D. is for the most part a sequel of respiratory infection and while rheumatic fever stands out as the most important single cause almost every case in the group would appear to contribute its quota—scarlet fever, diphtheria, pneumonia, influenza, bronchitis, &c. The fact also that many cases originally diagnosed catarrh or non-throat double fever in the hospital return as M.C.D., suggests the possibility that rheumatic fever occurs in various grades without the characteristic post-manifestations. To what extent various diseases and other causes outside the so known group are involved could not be determined. One refers that it is only slight as truly one case in the three years was directly associated with syphilis, and two cases in 1947 were complicated with scarletina.

*Course of Illness*—The vast majority of cases under the heading very acute modes of respiratory origin and, during the three years 1943-47, scarletina was by far the most important contributory factor, though it did occur in association with nearly every other disease in the group even with non-throat catarrh and tonsillitis. The occurrence of this complication with so many different infections, and whilst the mortality in the bacteriology in all cases, raises the suggestion that the most important etiological factor is not so much the specific infection concerned as the extensive development of the more common infections of the upper respiratory tract, particularly the nasopharynx. The more severe the infection of the nasopharyngeal mucosa the greater the danger of early and severe disease, hence its frequency in scarletina.

TABLE III—Cause of Death Comparison of Deaths 1912-1914 (1) With 1915-1916 (2)

|                            | 1912-1914 |      |      | 1915-1916 |      |      | 1917-1918 |      |      | 1919-1920 |      |      |
|----------------------------|-----------|------|------|-----------|------|------|-----------|------|------|-----------|------|------|
|                            | 1912      | 1913 | 1914 | 1915      | 1916 | 1917 | 1917      | 1918 | 1919 | 1920      | 1921 | 1922 |
| Stroke                     | —         | 1.45 | 8.01 | 0.45      | 1.15 | 1.54 | —         | —    | —    | —         | 1.81 | —    |
| C. D. I.                   | 1.68      | 0.14 | 1.30 | 0.47      | 0.58 | 1.00 | —         | —    | —    | —         | 0.11 | —    |
| Other respiratory          | —         | 0.75 | 8.38 | —         | 0.58 | —    | —         | —    | —    | —         | —    | —    |
| Influenza                  | 0.42      | —    | —    | —         | —    | —    | —         | —    | —    | —         | —    | 0.21 |
| Diphtheria                 | 0.15      | —    | 0.95 | —         | —    | —    | —         | —    | 0.05 | 0.50      | 0.67 | —    |
| Pneumonia                  | 0.10      | 0.55 | 1.15 | 1.11      | 1.61 | 1.95 | 1.65      | 0.75 | 0.50 | 0.27      | 1.01 | —    |
| Other respiratory diseases | —         | 0.11 | 0.63 | —         | 0.75 | —    | —         | —    | 0.24 | 0.24      | 1.17 | —    |
| Measles                    | —         | —    | —    | —         | —    | —    | —         | —    | —    | —         | —    | —    |
| Scarlet fever              | —         | —    | —    | —         | —    | —    | —         | —    | —    | —         | —    | —    |
| Whooping cough             | —         | —    | —    | —         | —    | —    | —         | —    | —    | —         | —    | —    |
| Tuberculosis               | —         | 0.35 | —    | 0.55      | 0.25 | —    | 0.55      | —    | 0.24 | 0.14      | 0.21 | —    |
| Other forms                | 0.41      | —    | —    | —         | 0.75 | —    | 0.50      | 0.25 | 0.14 | 0.15      | —    | —    |
| Total                      | —         | 0.31 | 0.35 | 1.14      | 0.43 | 1.75 | 0.94      | 1.15 | 0.55 | 1.14      | 0.95 | 1.03 |



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## PROBLEMS OF IMMUNITY AND RESISTANCE

(1) Among all the bacteria, etc. in regard to the metamorphosis (Franklin *and Associates*, Boston, Cambridge, 1936), reported in *Birds and Bees*, September 1934 probably apply equally to all respiratory infections; the majority of which do not so readily lend themselves to bacteriological investigation. (It was later shown how readily an organism, such as the metamorphosis, etc. provided through a community under lead and forms of resistance and how it disappears again by the simple rejection of "spring out"; the matter rate could be taken as an index of the degree of immunity; the importance of resistance follows from context and influence was emphasized. (1) was considered more important to isolate resistance from within than the actual nature of the metamorphosis, (2) Respiratory infection spreads in different degrees upon (1) the soil, (2) the soil, and (3) infection for dissemination. The infection are provided by different resistance with the onset of the cold weather in the fourth quarter of the year. Working metamorphosis are considered to show of equal resistance all the year round and as a result many of the usual causes of supply are cut off. The resistant resistance prevents the rapid development and extension of all the respiratory flora, so that in the first quarter of the year, the soil is planted and water (or other words respiratory organisms) and the soil has already been turned up.

The figures show how resistance rises in the fourth quarter to reach its maximum in the first quarter which is also the period of maximum mortality. Variations would also appear to have increased from year to year up until the middle of 1913, though in the second year, 1916, the cause of the mortality is not so distinctly confined to one special cause as in 1915. The high mortality in 1917 is confined to the first two quarters but this is unmarked as to give it a considerable lead on the other two by the whole year. The own mortality of insects in 1917 reached 36 per cent. (unpublished) percentages (unpublished) by exposure was the rule and probably all such cases that recovered, and many of the fatal cases, were complicated by severe middle ear infections. The course of the disease presented a striking similarity to that of the influenza cases in the great epidemic the following year.

It is seen from the figures therefore, that (1) the bulk of respiratory infections (over 90 per cent.) falls in the restricted sub-group (Table II) and probably half the ordinary colds are never recorded. (2) the maximum of resistance is reflected by an increase of resistance in the bacteriophage-resistant sub-group. (3) that maximum resistance and maximum resistance occur in the first quarter of the year (Tables II and III), (4) that the maximum resistance rises again in 1916, and not in 1917 with its higher death rate. The apparent explanation is that the higher mortality in 1917 fell from outside, and, further, the total resistance rate of the group,

TABLE 4.—*Continued* (continued) *Arctostaphylos* spp. in the Sierra Nevada, California, 1960-1961.

|                           | Death rates |       |       | Hospitalization rates |       |       | Totals |       |       |
|---------------------------|-------------|-------|-------|-----------------------|-------|-------|--------|-------|-------|
|                           | 1997        | 1998  | 1999  | 1997                  | 1998  | 1999  | 1997   | 1998  | 1999  |
| Respiratory               | 0.050       | 0.081 | 0.111 |                       |       |       |        |       |       |
| COPD                      | 0.176       | 0.276 | 0.386 | 0.284                 | 0.358 | 0.466 | 0.468  | 0.580 | 0.779 |
| Other respiratory         |             | 0.076 | 0.096 |                       |       |       |        |       |       |
| Larynx/bronch             |             |       |       | 0.076                 | 0.096 |       | 0.080  | 0.090 |       |
| Trachea/b.                | 0.096       |       | 0.096 |                       | 0.096 |       | 0.096  | 0.096 | 0.096 |
| Asthma                    | 0.264       | 0.386 | 0.416 | 0.416                 | 0.516 | 0.616 | 0.580  | 0.700 | 0.816 |
| Pneumonia                 | 0.176       | 0.186 | 0.286 | 0.186                 | 0.186 | 0.286 | 0.286  | 0.286 | 0.386 |
| Other respiratory disease | 0.076       | 0.086 | 0.286 | 0.076                 | 0.276 | 0.286 | 0.176  | 0.386 | 0.686 |
| Esophageal/col.           | 0.076       |       |       | 0.076                 | 0.086 | 0.086 | 0.086  | 0.086 | 0.086 |
| M.C.C.                    | 0.176       | 0.286 | 0.286 | 0.176                 | 0.286 | 0.286 | 0.286  | 0.386 | 0.486 |
| Palmar/brach              | 0.264       | 0.386 | 0.416 | 0.264                 | 0.386 | 0.416 | 0.416  | 0.586 | 0.686 |
| Other T.M.                | 0.186       | 0.176 | 0.286 |                       | 0.186 | 0.286 | 0.186  | 0.286 | 0.386 |
| Overall total             |             |       |       | 1.800                 | 2.779 | 3.416 | 2.800  | 3.759 | 4.416 |
| Total                     | 1.276       | 1.896 | 2.374 | 1.800                 | 2.779 | 3.416 | 2.800  | 3.759 | 4.416 |

[illegible][illegible]

individually and as a whole, fell off considerably in the 1914-1915 period in 1917; (3) the high death rate in 1910 is also associated with the numerous outbreaks and increasing rates for pulmonary tuberculosis for the three years; and (4) an increase in the death rate for tubercle and disease follows, by a quarter or so, the quarters when typhoid disease, particularly measles, were prevalent.

The advantages claimed for this method of classification as an aid to prevention are: (1) that it enables one to keep a finger on "respiratory poisons" and initiate immediate steps to forestall an epidemic by preventive measures; (2) it indicates at a glance what particular infection one has to deal with; and (3) it indicates results.

**Pneumonia.**—The control of respiratory disease means at about the control of the common cold and its sequelae. "A person with a normal nose and throat does not acquire a catarrh. Pathogenic organisms do not flourish on a healthy mucous membrane but an unhealthy state is produced by bad ventilation and overcrowding. Predisposing factors are most abundant and defects. Overcrowding also hinders the growth and action of pathogenic organisms. Prevention therefore, consists in effective ventilation at all times and seasons, which means effective warming arrangements in the winter months. Life is the open air as much as possible and thorough treatment of any predisposing causes such as nasal and meninges physiological abnormalities. Further public agencies must be alerted as to the importance of thorough sanitation and treatment for the common cold. While most references reach a step previously from on down where conditions are beyond our control the use of a reliable standard system might be of considerable value in reducing morbidity rates. (John Charnot and Priscilla Moss in this number of the Journal I give results obtained from the employment of vaccine in a limited number of cases.)

## Naval Medical History of the War.

### I. THE SOLDIER: ON DUTY AND WORK ON SHORE WITH THE ROYAL NAVAL INFANTRY.

BY FRANKLIN WATSON FRANKLIN, F. R. S. MEDICAL OFFICER, R. F. AND R. N.  
MEDICAL DEPT.

(Continued from p. 283.)

#### \*SHOCK.

The vital importance of preventing shock among the over-exhausted shock troops of the front is explained on a number of occasions, and in brief and treatment the forward Medical Officer must mainly concentrate his attention on preventing its occurrence, so if that be impossible, on combating its dire effects.

*Etiology*.—A discussion of the various theories of origin is beyond the scope and need not be discussed here. But, whereas the actual cause must still be regarded as still vague, there are certain definite predisposing factors which render one man much more liable to shock than another, and these factors are of great importance in formulating a logical method of preventing and lessening the condition.

(1) *Temperament*.—The temperament of a soldier is a predisposing cause which, amongst conditions, does not remove the soldier from the shock must always be regarded both from the mental and from the physical standpoint. The high nervous tension of a soldier both before and during an attack has an important bearing upon the degree of shock he experiences when wounded. The belief that he is invulnerable (and this is a common one amongst moderns) is richly justified, and his mental equilibrium is proportionately upset. It is not so much the so-called nervous man who suffers severely from shock, but rather the strong athlete, for any one individual who believes on attack, will not seriously consider the possibility of being wounded, and is seriously surprised when he is.

(2) *Cold*.—Cold is widely recognized as playing an important part in the production of shock. Rarely does a man "go over the top" when it is not cold and stiff. The hottest time of attack is at sunrise, and all the previous night he has probably been lying out in the "jumping off" position, often in a pool of icy water, always with no shelter from the cold wind and blinding snow.

(3) *Fatigue*.—Both mental and physical fatigue is a factor of much account. The soldier is mentally tired from the strain which is inseparable from trench life, and he is physically weary from every a

man's last days, and the wearing of his heavy, unbroken moustache.

13. *Stomach*—Back of head as a focus of pain in France and only, as unexplained shiver on death or serious illness followed. In the Russian King of Greece every man is well fed, but dying, or otherwise, dies to carry this, back, head, in the form of severely, non-rational and to be not necessarily lost in the stress of battle.

14. *Face*—The pain of a severe wound in death more intense than those who have not personally been executed, imagine and thus undoubtedly maintain shock.

15. *Stomach of Wound*—Abdominal wounds and fractures both produce a high degree of shock—so much so that in the case of the latter that it is so violently common, in person amongst both officers and men that a coup and fracture of the upper half of the torso is necessarily fatal. My experience, perhaps unfortunate in that a very large number of such men die of shock, either at the Hospital de la Trêve or the Field Ambulance.

On one occasion I had two officers both wounded by the same shell and each sustaining an unexplained compound fracture of the femur. One was treated within five minutes and the other within ten minutes of being wounded but yet both died of shock on the following day at the Field Ambulance.

In brief, it may be said that the amount of shock experienced is directly proportional to the severity of its precipitating factors.

*General Remarks*.—In an attack or serious battle wound a man would need and possibly hangry, i.e., everything favours the onset of shock, if he be wounded.

For purposes of description it is as well to take the hypothetical case of a man who sustains a large lacerated or amputated wound of the left thigh. He staggers on a few paces and then falls heavily to the ground. His face exhibits a look of mingled surprise and anger at being hit, his second one of fear that his Medical Officer may not find him, and his third one of resignation to certain death. Some half an hour later the Medical Officer comes to see him. His face is pale, drawn and somewhat haggard, his eyes half closed, unconsciously lighting up with a look of welcome but indicating that intense anguish of which his lips in various convulsions. He is quite conscious and, though answering questions intelligently, none of his own accord volunteers any information. He is hunched in a cold perspiration, his pulse rate is increased but his respiration not fairly normal. He shivers with cold and his only complaint is the intense cold which he experiences. The confusion is said to be one of primary cerebral shock.

The British Medical Officer applies a first-aid dressing, collects a stretcher party, repositions the movement of the patient on to the stretcher, covers him with a blanket, if one is available, and the weary, late-

and dangerous journey back to the Regimental Aid Post commences during which the man becomes still more ill.

On arrival at the Regimental Aid Post his blood-pressure, which formerly seemed rather higher than normal, is now subnormal, and his pulse is still further increased in frequency.

The man is here thoroughly dressed and warmth is applied both internally and externally. He is then sent back by stretcher to the Advanced Dressing Station of the Field Ambulance, a journey which now takes two to eight hours. Here he continues to bleed as here he becomes progressively worse. His body temperature is exceedingly low, his pulse rapid and feeble, his blood-pressure has dropped still further and his fingers and toes especially under the nails have acquired a bluish coloration. He is said to be passing into a condition of secondary wound shock.

From the Advanced Dressing Station where he would require immediate attention he is at once sent, now well wrapped up in blankets by motor ambulance, to the Main Dressing Station of the Field Ambulance and thence to the nearest Casualty Clearing Station—all the time his condition becoming steadily worse.

On arrival at the Casualty Clearing Station he is markedly apathetic and complains only of cold and intense thirst. His respirations are now more than doubled, and he is in danger of another episode. Secondary wound shock is said to be now fully developed.

Having at last reached a stationary hospital his further condition does not improve, the forward Medical Officer, but it must be remembered that during the tedious and difficult journey he has certainly been suffering from a progressive saving of blood, and probably upon a gradually developing. These two factors definitely tend to increase his condition of shock.

*Prognosis*.—Looking back over four years of fighting, I must admit that my prognosis has become much more guarded than it was when I first passed my examination. It is perhaps well-worth to say that, if the patient does not improve with the application of warmth and stimulants he will most certainly die.

*Treatment*.—Early treatment is essential to success, and it consists chiefly in maintaining the various predisposing factors which have been mentioned.

When the wounded man reaches the Regimental Aid Post his stretcher should be rested upon two blankets and a pillow should be placed underneath it. He should be well wrapped in blankets, and hot bottles applied to his feet and body.

The question of whether his wet soldier's clothes should be removed is a moot one. Personally, I prefer to leave it on, as it is said to conserve heat covered with blankets. My reasons for so doing are—

(1) The appearance of a Regimental Aid Post is necessarily cold.

(8) Such a procedure is very disturbing to the patient.

(9) It delays admission to hospital.

(10) Provided the patient can be kept warm with blankets, has not lost much blood, and is not in pain, he can be kept in the room.

But drinks such as tea containing a dash of brandy are essential. Those who believe in the uselessness of such drinks to add 1 dr. of sodium bicarbonate per pint of tea. The actual benefit conferred by such a procedure in a somewhat problematical, but as it cannot do harm, it is preferable, was pronounced.

The patient's mental and physical condition must be improved. He must be cheered up as much as possible. Pain must be diminished by the application of suitable splints and, most important of all a hypodermic injection of morphia, 1 gr. must be given. Morphia is a useful drug in all cases whatever. Certain vascular protest loudly against the giving of morphia to a wounded man, stating that it increases the anæsthesia and is no longer the protection of shock. The latter improbability, at least as much advice could be easily demonstrated to those if they remained to go over the tip with an amazing battalion and claimed to be wounded. A wounded soldier would quickly forget that he was not "wounded" and cry for morphia quite as eloquently as the most untrained man in the ranks.

Prevention of hæmorrhage is also of importance, and in the form "hæmorrhage" I include capillary oozing. During a journey of from two to twelve hours much blood can be lost from a small but steady oozing of blood. In first aid treatment capillary as well as arterial bleeding must always be arrested.

If the patient's condition of shock be due to extensive hæmorrhage, extensive transfusion of blood or plasma serum is called for. As a practice that can rarely be done further forward than the Casualty Clearing Station, it does not concern the Hospital Medical Officer and hence need not be discussed here.

#### WOUNDS OF BLOOD-VESSELS AND HÆMORRHAGE

**Principle**—Thus a pathological standpoint wounds of the large blood vessels may be divided into—

(1) Pure perforations. (2) Lacerated Wounds. (3) Wounds completely severing the vessels.

Thus a first aid point of view, however, they are better classified according to the extent of damage done to the soft parts—

(a) Where wounds of entrance and exit are round. (b) Where the limb is completely severed. (c) Where wound of entrance or exit—in limb—is large.

**General Practice**—To the common one of the most surprising things of first aid work is the forward march is the relatively small amount of bleeding which follows even extensive wounds. As long as the man



most likely to occur hemorrhages. These occur and even fatal hemorrhages may result.

When a large vessel has been injured by a bullet, the wound is extensive and may be so severe that blood escapes rapidly externally, but sometimes in the former round the tear and its contents farther bleeding. The wound is then the same that it is often responsible for, not whether the vessel has been wounded or not until it is cut down upon at the Casualty Clearing Station. Sometimes, however, a definite hemorrhage results and this gives a clue to the probable vascular injury.

When a limb is completely avulsed by a fragment of shell bleeding is as a rule not severe. On one occasion a man who was standing about twenty yards away from me had both legs blown off by a 74 mm shell. Before practically the time of injury, the man was under my observation. When he reached the Regimental Aid Post—a dark-hour journey of about an hour's duration—blood did not show through the first field dressing I had applied at the time of the injury and the only method of ligaturing the femoral arteries was from their anatomical positions. Such an operation is by no means uncommon.

When the wound of entrance is not a extensive hemorrhage is usually severe; not, unless the wounded man has an exceedingly good personal knowledge of practical first aid, he quickly dies. The case came under my notice of a medical officer who was wounded by a sniper, the bullet passing both the femoral artery and the vein. His description of the hemorrhage was that the blood spouted out at least six feet, but he was able to control it with compressive care with his left hand, whilst he adjusted a tourniquet with his right. In Gallop's Temporary Tourniquet Chapter 88 was compelled to use an external medical artery in a front line trench as the only method of checking the excessive hemorrhage.

Treatment.—The treatment of hemorrhage in military surgery, as is well known, is to arrest it either by pressure upon or ligature of, the bleeding point.

Tourniquets.—The tourniquet is undoubtedly employed very much more often than is necessary. Except during an advance or when there is a great influx of men, no man should be circumcised past the Regimental Aid Post with a tourniquet in situ. It should only be employed as a very temporary measure (a) during a rapid operation (b) to prevent serious bleeding whilst carrying a man back to the Regimental Aid Post.

Both medical authorities and common sense are far too fond of using a tourniquet as part of the routine treatment of all wounds of the extremities.

On seeing a patient with a tourniquet in position the Medical Officer's first duty is to take it off. Rarely, if ever, will serious bleeding occur and, if it does, it can always be arrested by more reliable methods.

The danger of the employment of a tourniquet is twofold. In the first place, it is by failing to function. I can recall from personal experience that it caused the most agonising pain and then pain greatly added to the

back from which the patient is already suffering. Secondly the blood supply to the back is entirely cut off and hence the part becoming denuded is a suitable surface for the development of granulation. Thirdly the length of time a tourniquet has been in position is directly proportional to the probability of gangrene setting in. An eminent surgeon has stated that, if a tourniquet has been applied for six hours, the limb will certainly die. Though quite recognizing the danger of such a procedure, I had a case under observation which was so left for over nine hours and the part saved.

Another point of note is that it is quite exceptional to find an individual who can apply a tourniquet in such a way as to fulfil the purpose for which the instrument was invented. The usual procedure is, to fast apply it tightly but in deference to the cries of pain from the patient, to slacken it somewhat. The real result is that the venous circulation is alone excluded and hence the arterial haemorrhage continues rather than diminishes.

*Procedure to arrest haemorrhage.*—When first seen, haemorrhage can usually be effectively arrested temporarily by pushing and a firm bandage on the area of venous bleeding, by merely elevating the limb. In the cases in which this is unsuccessful a tourniquet must be applied until the *Supernatural Aid Paste* is reached.

Then the wound is thoroughly examined. All visible bleeding points, as sought by artery, forceps, those which can easily be tied are ligated and forceps are left on the remainder. A dressing is then applied over all.

If the bleeding arises of a general capillary nature and there are no obvious vessels to be ligatured, it can always be arrested by plugging and bandaging tightly from below upwards. In order to apply sufficient pressure in the past without causing constriction, the bandage should be put on over a wooden splint placed on that side of the back opposite to the actual or wounds.

During the journey back to Field Ambulance, it is always well to examine the limb with a loose tourniquet, giving the patient humane attention to lighten it if the blood begins to show through the dressing.

At the Casualty Clearing Station the torn vessel is widely exposed and carefully tied. In a very few selected cases it may at this stage, be possible to restore the integrity of the torn vessel by suture. The circumstances and cases favourable for this method of treatment are extremely limited.

In the case of wounds of main arteries, the old idea that pressure was more likely to arrest if the accompanying vein had also to be tied is now quite exploded. Facts instead tend to prove that the anastomosing network of both diminishes the risk and hence such a method is almost entirely rejected, if the vein be itself unengaged.

#### Fractures

*Notes.*—Fractures may be caused by any of the causes of war. Though usually compound and comminuted still simple fractures are occasionally met with. These latter are sometimes found if a man be struck by a large

cases of fracture, the supporting fracture of a degree which has been shown to be sufficient for support of limb in its hanging.

*Asymptomatic fractures* are complicated by a great fracture of the femur in the mid part. This is especially the case when the injury is produced by a great deal of violence of high velocity but is also frequently caused in the femur by a rifle ball or bullet as they range. In the latter case, the extent of the fracture is so great that it not only fractures the bone but drives its comminuted fragments so far into it and they rather than the bullet, cause a large wound of exit. This is one of the many explanations of why certain wounds appear to have been caused by explosive bullets.

*Clavical fracture*—It was common for example a fracture of the lower half and the sharp pointed ends. All power in this limb is lost and the limb hangs to the ground. Whilst lying there the limb and hand exceedingly weak and helpless, but the pain is a few minutes later the symptoms and suggest a dull crushing character. For a few hours more unless suitable efforts be applied, the experience the next morning pain unbearable and much increased, however slight, suggests the fracture. On examination, the nature of the injury is soon made obvious.

*Prognosis*—The injuries immediately make known their leading questions:—

(1) Can the patient's life be saved?

(2) Can the limb be saved?

(3) What is the best method of securing firm a useful limb will be the end result?

*Regarding Life*—A very large number of cases undoubtedly die of shock before reaching the Veterinary Clearing Station and this makes the published figures as to recovery naturally exceedingly fallacious, because definite records are never obtainable further forward than the Main Dressing Station of the Field Ambulance and often not even there. Personally I regard a compound fracture of the upper third of the femur as one of the most fatal injuries of war.

The other dangers to life in such cases are haemorrhage, tetanus, gas gangrene and sepsis.

*Regarding Limputation*—Undoubtedly many have been lost in attempting to save a limb. Perforating amputations are frequently a bad lot of the main results of surgery are also required as if the coupling of soft parts is extensive.

*Amputation at a later date* is often necessary on account of considerable sepsis or gas gangrene.

*Regarding Dislocation*—If the fracture commences with a great, the weakness of the limb owing to inflammation may become permanent, exposed. But even this can occur and even more are also liable to be amputated.

*Treatment*—Though with the best and constant attention to the long

bones will be discussed here. It is of the utmost importance that it be remembered that the temporary methods adopted by the Surgeons of the Royal Navy should as far as possible be identical with those which will be used when the patient reaches hospital.

First aid treatment naturally divides itself into—

- (a) Treatment of the wound
  - (b) Treatment of the fracture
  - (c) Treatment of the patient
- (a) Will be now discussed under the headings of "General Wound" and "Shock" and need not be considered further.

*Treatment of the Fracture*—In practically all such cases the patient is brought in some incommunicable transport. Deliberation must be wisely exercised and haste friction rather than relaxation is to be aimed at, and it must be borne in mind that the patient is to be moved at all, and if possible he should be moved. The deformity following a fracture should, as far as possible be corrected, but absolute relaxation is as a rule quite impossible. Anesthesia is from the first aid point of view, the most important desideratum and it can usually be fairly easily corrected. In applying splints the amount necessary can reasonably be judged by the pressure or resistance of parts. If the patient complains of any marked discomfort, the amount of extension is excessive and must be adjusted.

In applying splints to a recently wounded man, there are certain points to remember—

(1) The patient is usually seen before there is any secondary effusion round the exposed part and hence bandaging must not be applied tightly or they become exceedingly painful before he reaches the Casualty Clearing Station.

(2) Most methods of extension extend continuous pressure on parts of the body which are not accustomed to bearing it and hence distortion of the skin are apt to occur. This is frequently caused by the ring of a Thomas' knee splint or by the pressure band of a long Leonard's splint, and it greatly hinders the subsequent treatment of the case. In order to minimize these various complications all splints must be carefully padded and extension must never be excessive.

The methods described here of dealing with individual fractures are those which have actually proved to be useful in the forward area. The main aim throughout was to devise methods which would prevent further damage to the soft parts by retaining definite fractures. The object of first aid and work in the field is so to fix the fracture that the splint applied need not be changed until the patient reaches the Casualty Clearing Station. Minor adjustments may be necessary in the Advanced or Main Dressing Stations of the Field Ambulance, but a complete change of apparatus is strongly to be deprecated and always means loss of attention on the part of the British and Kaiser's Officers or even ambulance on the part of the Field Ambulance surgeons.

## NIGHTINGALE, FRACTURES

*Observations.*—It has been found by experience that accurate judgment of the necessary size and form to be obtained by reduction, in fitting the splint, is principally a question of the Thomas splint. Attention to the use of a convenient means of transport in narrow wards and a splint of a fairly applied form is found that the County Officer, Nightingale, is usually apt to the anatomical sense and judgement.

The forward Medical Officer's method of manipulation is to support the forearm and hand in a strong place a small pillow the wrist and lead the arm to the side.

*Forearm.*—From an anthropometric standpoint the arm should be put up in full extension because if it be previously splinted on the pronated position, adhesion between the radius and ulna may occur with permanent loss of supination. As it is exceedingly painful to keep the forearm supported if the elbow be fixed the correct method of treatment would be to put the arm up in full extension over a Thomas splint. The being supported further forward than the County Officer's splint, the British Medical Officer should compensate by applying an external rectangular splint, which will keep the forearm midway between supination and pronation. If the radius be fractured it is obviously necessary to support the hand and for this reason both limbs of the splint must be long.

*Fracture of Forearm.*—Here the main danger is injury to the bloodies, and hence all such cases should be labelled by immediate evacuation from the Advanced Dressing Station to the County Dressing Station. The forward Medical Officer should rarely venture himself with applying a firm bandage round the joint.

*Fracture of Forearm.*—From the British Medical Officer's standpoint this is the most important of all fractures partly because it is an exceedingly dangerous injury, partly because he has all the necessary appliances at his disposal to treat it efficiently from the first.

Every case should be treated from the commencement with a Thomas splint. The only exception to this rule is a case in which the wound is so vast a person that the arm would press directly upon it. Here a London's long splint should be used. A Thomas splint should always be used in all extensive lacerated wounds of the thigh and in all cases of severe fractures in the region of the knee-joint.

The various necessity for putting up a fractured lower arm:—

(1) Splinter or two together with a padding interposition. (2) Three splints. (3) Thomas splint. (4) Suspension bar. (5) Four triangular bandages. (6) Three or four other bandages (such as pads or length). (7) Dressings. (8) Good splinting. (9) Medical officer and one stretcher bearer.

*Application of a Thomas Splint.*—(1) The upper arm is placed lying flat on the back on a stretcher supported on two trestles and with a padding across below.

(3) The tourniquet by covering the whole of the limb along the whole length of the outer wound and the entire limb is applied.

(4) An artery, by traction on the limb, inside the tourniquet lies at about 12 in. off the shoulder.

(4) The wound is quickly dressed and limbs bandaged.

(5) Three pieces of Goults splinting are pinned across the side of the limb and fixed in position.

(6) The splinting is finished with two down bandages—one on the anterior and one on the outer, the limb and being secured.

(7) A Thomas three splint, previously prepared with five slings of linen bandage round the main bar, is slipped over the foot until the ring rests against the lateral splint—the assistant at the time maintaining pressure on the limb.

(8) The ends of the two down bandages are now tied to the transverse bar at the end of the splint and by tightening these pressure is obtained.

(9) The six ends of linen bandage are then passed below the limb, looped round the outer bar and fixed in position, safety pins forming a suspension, and on which the leg can restably rest.

(10) A triangular bandage is then laid across the anterior aspect of the limb and tied on either side to the lateral bars. This done the limb settles splint and also prevents any flexion of the knee.

(11) To keep the ring of the splint on the lateral splint a pad of wool is inserted beneath the ring at its position with the outer lateral bar.

(12) The three limb splints are now again tightened.

(13) The suspension bar is now adjusted to the splint and the two lateral bars of the splint are attached to it by triangular bandages so supporting the limb about 4 in. off the shoulder.

(14) To prevent jolting during the subsequent journey, the side bars of the splint are also loosely tied to the lateral bars of the suspension splint.

*Precautions before the limb is fixed*—the limb must lie on the bare and table parts must be fixed. The footrest immediately below the knee a Thomas splint is the most satisfactory and for those lower down a leg splint.

#### ABDOMINAL WOUNDS

*Summary*—It is a surprising fact how relatively infrequent perforating wounds of the abdomen were, both in France and Gallipoli. In my Battalion it was under 2 per cent. of all wounds, whereas in Field Ambulances it was approximately 2 per cent. and in Casualty Clearing Stations only 0.7 per cent. The difference in these figures is accounted for by the fact that many of the men were sent down in that way back from the D.S.F. to the Field Ambulances and Casualty Clearing Stations.

*Notes*—Abdominal wounds may be divided into—

(1) Wounds of the parietes

(2) Perforating wounds.

Before operating it is often difficult and sometimes impossible to differentiate between perforating and non-perforating wounds. An accident

Wright is the son of a private of Glasgow Regiment Elyon (1848-1851), was wounded during the capture of Hatteras. The wound is the wound of entrance, was in the region of the umbilicus and three inches to the back. The only fact pointing to the wound being a penetrating was the absence of any marked collapse and its operation is well timed that the perforation had not been injured.

Treatment.—The practice of operating upon all abdominal wounds has reduced the mortality by over 80 per cent. and the question of prognosis as indices of operation is directly proportional to the time when operation begins covering the wound and operative interference. If operation can be operated on within an hour of being wounded the prognosis is distinctly hopeful, every subsequent hour which elapses greatly lessens the chance of recovery. Under these circumstances rapid action is to be the General Clearing System is suggested, as no case should escape treatment to be adopted in the Regimentsal Aid Post. All vital fluid is of course withheld, but water may be given, and in every case morphine, 1 gr. should be repeated judiciously, freely to relieve pain and anxiety to relieve anxiety.

Amputation.—Major-General Sir Gilbert Walker in speaking 824 cases of abdominal wounds found his cases were due to bullet wounds and 580 to shell or bomb fragments or shrapnel. There is probably no wound sufficiently light to be worn during an attack, which a rifle or machine gun bullet fired at close range will not perforate, but wounds will undoubtedly protect the wound in many cases from shell or bomb fragments or shrapnel. No antiseptic wound was seen in the Royal Naval Division but, in the Essex Battalion, such benefit was gained by the late Lieutenant-Colonel Kirkpatrick. D. F. G., entering his case in being the head but neither of these circumstances made to the anterior abdominal wall. This is a position which might well be made general.

#### CASE REPORT

Wounds of the chest form approximately 2 per cent. of all wounds.

Syndrome.—The best example of a man who has been wounded in the chest is that of a person who, when he describes as "having landed all the wind out of him." This is quickly followed by a suffocating feeling in which he gasps for air and often shows intense respiratory distress.

Pulsus Signus.—Hemipneus is always present when the lung tissue is exposed but, unless it is quickly fatal, it tends progressively to diminish as treatment is given. When the patient reaches the General Clearing Station, it rarely is a case of anxiety. Respiration is labored and attended by a sharp pleuritic-like pain, the pulse is quick and thereby and intense shock is always present.

Prognosis.—Hemipneus may cause death in a few minutes but after twelve hours from the receipt of the wound is rarely serious. In a through and through bullet wound, unless death be instantaneous, the prognosis is distinctly good.

It is surprising to find that the British Government has not made any provision for the treatment of the wounded at sea. The only provision made is that the wounded should be taken to the nearest hospital ship, and that the wounded should be taken to the nearest hospital ship. The only provision made is that the wounded should be taken to the nearest hospital ship, and that the wounded should be taken to the nearest hospital ship.

From the first and point of view the mortality is largely increased by delayed collection, difficult transport, bad weather and rough seas.

Treatment consists of —

- (1) Cleaning the wound.
- (2) Preventing any further infection.
- (3) Quick evacuation to hospital.

All cases should be sent back to the Advanced Dressing Station of the field ambulance in the most convenient position of space a regulation trench stretcher. In all cases amputation should be given. This lessens the respiratory distress and alleviates the mental anxiety of the patient.

If there is a valve-like opening into the pleura through which air is sucked during inspiration, forming a pneumothorax, that opening must be closed. Personally I found the best method of doing this was by plugging the hole with gauze and finally covering with vasoline. The more than one occasion it was best necessary to enlarge the wound in order to allow air under great pressure to escape. In doing this great care must be taken to ensure that the air escapes slowly.

#### HEAD INJURIES

In trench warfare the relative frequency of head injuries to all wounds is commonly high as the upper part of the body is perhaps more often exposed than the lower. This was especially noticeable at Gallipoli as the Turks were extremely proficient in the art of sniping and as soldiers stood behind wire entanglements until the Germans reached France. The advent of the gas helmet produced a remarkable diminution not only in the number of head injuries but, of even greater importance, in the number of penetrating wounds of the brain in which the dura mater was injured.

Classification — (1) Skull wounds.

- (2) Compound fractures with the dura mater intact.
- (3) Compound fractures with the dura mater injured.
- (4) Compound fractures with gross injury to the cerebral tissue.

The importance of the distinction between classes (2) and (3) is great in the dura mater is the vital barrier against extra-cranial infection.

Clinical Features — In scalp wounds except for a certain amount of laceration, the only symptoms may be slight headache and dizziness but more frequently definite unconsciousness is present.

In cases of fracture, however complete unconsciousness is usually found the blood-pressure is markedly lowered the respirations are increased in frequency, and the pulse is small and rapid.





hemian spasm and bilateral symmetrical hyperreflexia and pathologic reflexes.

**Post-mortem.**—Aut. of death due to gastric shock on the first twenty-four hours. At the patient survives the third day he will probably succumb.

**First Aid Treatment.**—The British Medical Officers frequently and consistently do primary first aid upon the casualty at properly adj. (during the operation) and all wounded men and keep them in position until all first aid is done, since has passed. (The duty of attending men on the way is depicted, symptoms of a gasulant has with the patient and emergency attending on the medical officer.) He also impresses upon all men the great importance of keeping every man who has been passed however slightly, in absolute rest.

After the order has been given to remove patients any man who has difficulty in breathing or given an excessive salivation from one of the capsules supplied in all stretcher boxes.

All equipment is removed and all light clothing loosened.

Turning in the early stages, should be encouraged and if it does not come spontaneously should be induced by rubbing the back of the throat.

All gas cases must be removed by stretcher to the field ambulance, removed to be allowed to walk. At the Field Ambulance the men have all treatment and absolute rest and plenty of air. Restless cases should be given oxygen, collapsed cases plasma, and cyanide cases cyanamide oxygen inhalation. All cases should be transferred to the Casualty Clearing Station as soon as possible.

## Clinical and Practical Notes

### ACUTE INTESTINAL OBSTRUCTION DUE TO INTERMESENTERIC OR MESENTERIC DIVERTICULUM AND INFUNDIBULUM AT ILEO CAECAL JUNCTION

BY NATHAN GREEN WINTHROP, M. D., BOSTON, MASS.

I. W. G. aged 47, boy. Admitted April 24, 1920, with a history that he had caught and taken some April 17, and that he had vomited since then after lunch.

Temperature each morning 99-100 C. rose in evening. Forward rectal tube had been. He then had colic.

On admission.—Pain recent, central and constant. Bowel distended and tense. Unknown exactly rigid and tender. Diets not restricted with standard hospital analgesia.

**Previous History.**—Appendix removed six months ago.

**Operation.**—Abdomen opened through double midline incision over the existing belt. The right colon drawn outside. A large omentum, about 1 m. from the cecal junction, which had originated into the cecum. This was with great difficulty removed. The bowel space covered after being covered with saline swabs was in fact empty. A diverticulum was then found about 15 m. from the ileo-caecal junction, which was also omentomized. This was dissected and cut off in the base of the bowel, but was sown up with continuous suture, care being taken to prevent narrowing of lumen. Flap covered with her colon, and the bowel completely restored. Omentum adherent to cecum dissected and cut. Bowel returned into abdomen, which was closed in layers without drainage. The

growth, the growth being more rapid in the distal than in the proximal portion of the nail.

The growth of the nail is continuous, and the nail is constantly growing, and the growth is continuous.

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and I like to read with him and have the pleasure of reading to him. I'm enjoying the time we have together in quiet study. I feel it is a good thing to have a quiet time with him, and I'm sure I'll be able to find a way to do that. I'm sure I'll be able to find a way to do that.

[illegible]

During the previous 10 years, the principal cause of the increase in the number of people aged 65 and over has been the increase in the number of people aged 65 and over who are still in the labor force.

I think there is a lot of discussion in a critical method of Lippman's, especially in relation to where it is difficult to be as appropriate as the public. I think that it is a fact, that the main symptoms have already led to the formation of a new culture. I feel, however, that the system is the source of prolonged non-attitude in culture.

AN ATTEMPT TO RESTRAIN THE TREATMENT OF SYRILIA  
IN THE MEXIC

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|  | 2008-09 | 2007-08 | 2006-07 | 2005-06 | 2004-05 | 2003-04 | 2002-03 | 2001-02 | 2000-01 | 1999-00 | 1998-99 | 1997-98 | 1996-97 | 1995-96 | 1994-95 | 1993-94 | 1992-93 | 1991-92 | 1990-91 | 1989-90 | 1988-89 | 1987-88 | 1986-87 | 1985-86 | 1984-85 | 1983-84 | 1982-83 | 1981-82 | 1980-81 | 1979-80 | 1978-79 | 1977-78 | 1976-77 | 1975-76 | 1974-75 | 1973-74 | 1972-73 | 1971-72 | 1970-71 | 1969-70 | 1968-69 | 1967-68 | 1966-67 | 1965-66 | 1964-65 | 1963-64 | 1962-63 | 1961-62 | 1960-61 | 1959-60 | 1958-59 | 1957-58 | 1956-57 | 1955-56 | 1954-55 | 1953-54 | 1952-53 | 1951-52 | 1950-51 | 1949-50 | 1948-49 | 1947-48 | 1946-47 | 1945-46 | 1944-45 | 1943-44 | 1942-43 | 1941-42 | 1940-41 | 1939-40 | 1938-39 | 1937-38 | 1936-37 | 1935-36 | 1934-35 | 1933-34 | 1932-33 | 1931-32 | 1930-31 | 1929-30 | 1928-29 | 1927-28 | 1926-27 | 1925-26 | 1924-25 | 1923-24 | 1922-23 | 1921-22 | 1920-21 | 1919-20 | 1918-19 | 1917-18 | 1916-17 | 1915-16 | 1914-15 | 1913-14 | 1912-13 | 1911-12 | 1910-11 | 1909-10 | 1908-09 | 1907-08 | 1906-07 | 1905-06 | 1904-05 | 1903-04 | 1902-03 | 1901-02 | 1900-01 | 1899-00 | 1898-99 | 1897-98 | 1896-97 | 1895-96 | 1894-95 | 1893-94 | 1892-93 | 1891-92 | 1890-91 | 1889-90 | 1888-89 | 1887-88 | 1886-87 | 1885-86 | 1884-85 | 1883-84 | 1882-83 | 1881-82 | 1880-81 | 1879-80 | 1878-79 | 1877-78 | 1876-77 | 1875-76 | 1874-75 | 1873-74 | 1872-73 | 1871-72 | 1870-71 | 1869-70 | 1868-69 | 1867-68 | 1866-67 | 1865-66 | 1864-65 | 1863-64 | 1862-63 | 1861-62 | 1860-61 | 1859-60 | 1858-59 | 1857-58 | 1856-57 | 1855-56 | 1854-55 | 1853-54 | 1852-53 | 1851-52 | 1850-51 | 1849-50 | 1848-49 | 1847-48 | 1846-47 | 1845-46 | 1844-45 | 1843-44 | 1842-43 | 1841-42 | 1840-41 | 1839-40 | 1838-39 | 1837-38 | 1836-37 | 1835-36 | 1834-35 | 1833-34 | 1832-33 | 1831-32 | 1830-31 | 1829-30 | 1828-29 | 1827-28 | 1826-27 | 1825-26 | 1824-25 | 1823-24 | 1822-23 | 1821-22 | 1820-21 | 1819-20 | 1818-19 | 1817-18 | 1816-17 | 1815-16 | 1814-15 | 1813-14 | 1812-13 | 1811-12 | 1810-11 | 1809-10 | 1808-09 | 1807-08 | 1806-07 | 1805-06 | 1804-05 | 1803-04 | 1802-03 | 1801-02 | 1800-01 | 1799-00 | 1798-99 | 1797-98 | 1796-97 | 1795-96 | 1794-95 | 1793-94 | 1792-93 | 1791-92 | 1790-91 | 1789-90 | 1788-89 | 1787-88 | 1786-87 | 1785-86 | 1784-85 | 1783-84 | 1782-83 | 1781-82 | 1780-81 | 1779-80 | 1778-79 | 1777-78 | 1776-77 | 1775-76 | 1774-75 | 1773-74 | 1772-73 | 1771-72 | 1770-71 | 1769-70 | 1768-69 | 1767-68 | 1766-67 | 1765-66 | 1764-65 | 1763-64 | 1762-63 | 1761-62 | 1760-61 | 1759-60 | 1758-59 | 1757-58 | 1756-57 | 1755-56 | 1754-55 | 1753-54 | 1752-53 | 1751-52 | 1750-51 | 1749-50 | 1748-49 | 1747-48 | 1746-47 | 1745-46 | 1744-45 | 1743-44 | 1742-43 | 1741-42 | 1740-41 | 1739-40 | 1738-39 | 1737-38 | 1736-37 | 1735-36 | 1734-35 | 1733-34 | 1732-33 | 1731-32 | 1730-31 | 1729-30 | 1728-29 | 1727-28 | 1726-27 | 1725-26 | 1724-25 | 1723-24 | 1722-23 | 1721-22 | 1720-21 | 1719-20 | 1718-19 | 1717-18 | 1716-17 | 1715-16 | 1714-15 | 1713-14 | 1712-13 | 1711-12 | 1710-11 | 1709-10 | 1708-09 | 1707-08 | 1706-07 | 1705-06 | 1704-05 | 1703-04 | 1702-03 | 1701-02 | 1700-01 | 1699-00 | 1698-99 | 1697-98 | 1696-97 | 1695-96 | 1694-95 | 1693-94 | 1692-93 | 1691-92 | 1690-91 | 1689-90 | 1688-89 | 1687-88 | 1686-87 | 1685-86 | 1684-85 | 1683-84 | 1682-83 | 1681-82 | 1680-81 | 1679-80 | 1678-79 | 1677-78 | 1676-77 | 1675-76 | 1674-75 | 1673-74 | 1672-73 | 1671-72 | 1670-71 | 1669-70 |
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In the July issue too of this Journal an article was published on "Japan and the M. H. R. Technique" and I have been thinking of writing to you on the subject.

This present paper aims to establish that the group has been read and is understood that both aspects should be considered to  $\alpha_2$  have

I have interpreted the treatment of *typhus* by medical officers as based on the use by special methods not yet set out, that is, as being different from the ordinary 50-50 shot with ordinary shot, the giving of small and infrequently more complicated than giving a hypodermic of morphine or a 10 cc. of T. B. 1012.

During the run the water gel polymer M is B continuously and the gel swells in between the B-monomers and the water is still present.

James says that drug trafficking can be one, and does put a more cheerful spin on it than all those law books and all that.

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The objectives in treating a phobic effect, however long-lasting, were built to be used and would be half empty, except the essential ideas, used and defined are:

[illegible]

These physical signs of agitation may be taken by the nurse as signs of fear, but in many cases the attitude may be analyzed and something out of the same follows. At least, that is my opinion, which will I think be shared by a very few of my best people. Some advantages of having a person on hand who knows it all. I have been suggested that all cases of night-blindness should pass through a specialist's hands. I cannot see it necessary for this.

The ordinary man, the speaker, will always, obviously, realize, because he will always choose the way in which he will get the same value, as will all his successors, that his choice is being reasonable.



The Effect of Parental Involvement on the Academic Achievement of Children: A Meta-Analysis of Experimental and Quasi-Experimental Studies

The two papers in this category are modest in the testimony of applesauce, and make a strong case for the value of the article in their very nature.

The state will, therefore, be liable on appeal as regards the part for which it is liable, although it can recover against the land over the state's share of the common interest in the house.

It is more difficult to prove a converse statement, as did Forth and Folke, to find, by a single test, all individuals in a colony (or, in a series of colonies) in which between 50 and 100% standard of every 10 larvae percentages of some of species of  $A. \text{flavipes}$  and  $C. \text{leptus}$  all specimens will readily give the necessary result. It is not a converse because, if all the larvae will do the number 1 standard group, it is not  $A. \text{flavipes}$  or  $C. \text{leptus}$ . This means by assuming there is a standard group, it is not  $A. \text{flavipes}$  or  $C. \text{leptus}$ .

As the 1970s progressed, however, more and more real living wages had to be paid for a quantitative expansion in the number of actual proprietors of the state-owned giant, the enterprise, and the state had to give up its long-held position of absolute control over the economy. The state had to give up its monopoly of the means of production, and the state-owned giant had to be broken up into smaller units. The state had to give up its monopoly of the means of production, and the state-owned giant had to be broken up into smaller units. The state had to give up its monopoly of the means of production, and the state-owned giant had to be broken up into smaller units.

Personally, I often go a little further than they may be, especially when the local situation is difficult, as it was in all dispersed or emergency or prisoner situations. In the early days, except in a few, I saw few enough men who were a necessary part of our work, and I think that the physical residual effects of a somewhat difficult career, which I have got to be the same.

The follow-up study, with 1,000 subjects, which began the questionnaire, came to the methodological conclusion that the liberal version will probably induce more than 11 percent, but fewer than 20 percent, of the subjects to agree with the statement that the government should not be allowed to force people to wear masks in public places. The study also found that the subjects who had been asked to wear masks in public places were more likely to agree with the statement than those who had not been asked to wear masks. The study also found that the subjects who had been asked to wear masks in public places were more likely to agree with the statement than those who had not been asked to wear masks.

I think  $\arg(\alpha) \neq 0$  is  $\arg(\alpha) \in \mathbb{R}$  (or  $\arg(\alpha) \in \mathbb{R} \setminus \{0\}$ ) is a stronger proposition, as long as we have some reason for thinking  $\arg(\alpha) \in \mathbb{R}$ . But we get something similar (with  $\arg(\alpha) \in \mathbb{R}$  as the stronger proposition) by turning page 9 of *What's new* 9.1.1. In  $\mathbb{C}_\infty$ , we have  $\arg(\alpha) \in \mathbb{R}$  as a weaker (or weaker) proposition. I believe that it is not  $\arg(\alpha) \in \mathbb{R}$  (or  $\arg(\alpha) \in \mathbb{R} \setminus \{0\}$ ) that is long drawn out, as in the case of  $\mathbb{R}$ . I am not a  $\mathbb{C}_\infty$  specialist, so I am unsure.

Provide an easy beginning to any group of singers. When used in the 3rd field, this composition leads to a unified subsequent melody and ends in 3, 5, or 6 measures (for each one of the 12 such numbers).

On this map we're getting to a critical juncture where, say, say on the right hand Minnesota, can cut off a lot of the right side of why those results are being achieved.

En el siguiente cuadro se presentan los resultados de los análisis de regresión logística para las variables de la ecuación (1). Los resultados indican que la probabilidad de que un individuo participe en una actividad de voluntariado aumenta con la edad, el nivel de educación, el ingreso y el tiempo libre. Por otro lado, la probabilidad de que un individuo participe en una actividad de voluntariado disminuye con el nivel de desempleo y el nivel de pobreza.

I think the long run rate for drops in consumption per adult will be no more negative than the work of the case reflects, so possibly not as good for foreign and hence that drop is not a scenario we should be most worried about. The percentage of people who are not at all participating in labor force, which is a more real one I think that it must be so much, is a pretty complicated scenario in the future and when.

Das Internationale Zentrum für Entwicklungspolitik (IPEZ) ist ein Zusammenschluss von vier Organisationen: dem Deutschen Institut für Entwicklungspolitik (DIEP), dem Institut für Entwicklungspolitik der Universität Bonn (IPEB), dem Zentrum für Entwicklungspolitik der Universität Köln (ZEP) und dem Zentrum für Entwicklungspolitik der Universität zu Köln (ZEP).

1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024, 2025, 2026, 2027, 2028, 2029, 2030, 2031, 2032, 2033, 2034, 2035, 2036, 2037, 2038, 2039, 2040, 2041, 2042, 2043, 2044, 2045, 2046, 2047, 2048, 2049, 2050, 2051, 2052, 2053, 2054, 2055, 2056, 2057, 2058, 2059, 2060, 2061, 2062, 2063, 2064, 2065, 2066, 2067, 2068, 2069, 2070, 2071, 2072, 2073, 2074, 2075, 2076, 2077, 2078, 2079, 2080, 2081, 2082, 2083, 2084, 2085, 2086, 2087, 2088, 2089, 2090, 2091, 2092, 2093, 2094, 2095, 2096, 2097, 2098, 2099, 2100, 2101, 2102, 2103, 2104, 2105, 2106, 2107, 2108, 2109, 2110, 2111, 2112, 2113, 2114, 2115, 2116, 2117, 2118, 2119, 2120, 2121, 2122, 2123, 2124, 2125, 2126, 2127, 2128, 2129, 2130, 2131, 2132, 2133, 2134, 2135, 2136, 2137, 2138, 2139, 2140, 2141, 2142, 2143, 2144, 2145, 2146, 2147, 2148, 2149, 2150, 2151, 2152, 2153, 2154, 2155, 2156, 2157, 2158, 2159, 2160, 2161, 2162, 2163, 2164, 2165, 2166, 2167, 2168, 2169, 2170, 2171, 2172, 2173, 2174, 2175, 2176, 2177, 2178, 2179, 2180, 2181, 2182, 2183, 2184, 2185, 2186, 2187, 2188, 2189, 2190, 2191, 2192, 2193, 2194, 2195, 2196, 2197, 2198, 2199, 2200, 2201, 2202, 2203, 2204, 2205, 2206, 2207, 2208, 2209, 2210, 2211, 2212, 2213, 2214, 2215, 2216, 2217, 2218, 2219, 2220, 2221, 2222, 2223, 2224, 2225, 2226, 2227, 2228, 2229, 2230, 2231, 2232, 2233, 2234, 2235, 2236, 2237, 2238, 2239, 2240, 2241, 2242, 2243, 2244, 2245, 2246, 2247, 2248, 2249, 2250, 2251, 2252, 2253, 2254, 2255, 2256, 2257, 2258, 2259, 2260, 2261, 2262, 2263, 2264, 2265, 2266, 2267, 2268, 2269, 2270, 2271, 2272, 2273, 2274, 2275, 2276, 2277, 2278, 2279, 2280, 2281, 2282, 2283, 2284, 2285, 2286, 2287, 2288, 2289, 2290, 2291, 2292, 2293, 2294, 2295, 2296, 2297, 2298, 2299, 2300, 2301, 2302, 2303, 2304, 2305, 2306, 2307, 2308, 2309, 2310, 2311, 2312, 2313, 2314, 2315, 2316, 2317, 2318, 2319, 2320, 2321, 2322, 2323, 2324, 2325, 2326, 2327, 2328, 2329, 2330, 2331, 2332, 2333, 2334, 2335, 2336, 2337, 2338, 2339, 2340, 2341, 2342, 2343, 2344, 2345, 2346, 2347, 2348, 2349, 2350, 2351, 2352, 2353, 2354, 2355, 2356, 2357, 2358, 2359, 2360, 2361, 2362, 2363, 2364, 2365, 2366, 2367, 2368, 2369, 2370, 2371, 2372, 2373, 2374, 2375, 2376, 2377, 2378, 2379, 2380, 2381, 2382, 2383, 2384, 2385, 2386, 2387, 2388, 2389, 2390, 2391, 2392, 2393, 2394, 2395, 2396, 2397, 2398, 2399, 2400, 2401, 2402, 2403, 2404, 2405, 2406, 2407, 2408, 2409, 2410, 2411, 2412, 2413, 2414, 2415, 2416, 2417, 2418, 2419, 2420, 2421, 2422, 2423, 2424, 2425, 2426, 2427, 2428, 2429, 2430, 2431, 2432, 2433, 2434, 2435, 2436, 2437, 2438, 2439, 2440, 2441, 2442, 2443, 2444, 2445, 2446, 2447, 2448, 2449, 2450, 2451, 2452, 2453, 2454, 2455, 2456, 2457, 2458, 2459, 2460, 2461, 2462, 2463, 2464, 2465, 2466, 2467, 2468, 2469, 2470, 2471, 2472, 2473, 2474, 2475, 2476, 2477, 2478, 2479, 2480, 2481, 2482, 2483, 2484, 2485, 2486, 2487, 2488, 2489, 2490, 2491, 2492, 2493, 2494, 2495, 2496, 2497, 2498, 2499, 2500, 2501, 2502, 2503, 2504, 2505, 2506, 2507, 2508, 2509, 2510, 2511, 2512, 2513, 2514, 2515, 2516, 2517, 2518, 2519, 2520, 2521, 2522, 2523, 2524, 2525, 2526, 2527, 2528, 2529, 2530, 2531, 2532, 2533, 2534, 2535, 2536, 2537, 2538, 2539, 2540, 2541, 2542, 2543, 2544, 2545, 2546, 2547, 2548, 2549, 2550, 2551, 2552, 2553, 2554, 2555, 2556, 2557, 2558, 2559, 2560, 2561, 2562, 2563, 2564, 2565, 2566, 2567, 2568, 2569, 2570, 2571, 2572, 2573, 2574, 2575, 2576, 2577, 2578, 2579, 2580, 2581, 2582, 2583, 2584, 2585, 2586, 2587, 2588, 2589, 2590, 2591, 2592, 2593, 2594, 2595, 2596, 2597, 2598, 2599, 2600, 2601, 2602, 2603, 2604, 2605, 2606, 2607, 2608, 2609, 2610, 2611, 2612, 2613, 2614, 2615, 2616, 2617, 2618, 2619, 2620, 2621, 2622, 2623, 2624, 2625, 2626, 2627, 2628, 2629, 2630, 2631, 2632, 2633, 2634, 2635, 2636, 2637, 2638, 2639, 2640, 2641, 2642, 2643, 2644, 2645, 2646, 2647, 2648, 2649, 2650, 2651, 2652, 2653, 2654, 2655, 2656, 2657, 2658, 2659, 2660, 2661, 2662, 2663, 2664, 2665, 2666, 2667, 2668, 2669, 2670, 2671, 2672, 2673, 2674, 2675, 2676, 2677, 2678, 2679, 26

I certainly don't feel the "classroom" should be quiescent and closed to regularly scheduled as they allow me the medical officer and naturally have the patient in response to each course.

There is a tendency to "expanding" to patients how necessary it is to watch their "Worms" and to give, and cause effects there and in explaining that a negative may be obtained and more treatment may be needed, to bring a negative home to patients.

We always will depend on "having seen by others" that a Worms may obtain a negative, that negative, and when a time they get to know and give, the a clinical effect and when a patient obtain a negative and a relief of further treatment.

I have not seen any other of men who might succeed by my suggestion but I have not seen a single case.

Others, I thought, I had that if a man has a perfect Worms means of a man's life to try and give a negative. In a proportion of cases more efforts will be made with another. In treatment through the great majority negative. I cannot think that it is not right to look them off in the hope of getting them negative in the long, long run.

I cannot imagine the treatment as, in all cases, evidence of negative (including the most large of patients) would have your legacy, do I, and a will be necessary. My reason for doing so is that in the great majority of cases the Worms are as evidenced by the negative treatment. It may be made negative and means negative. It may be made negative and may then release.

One may be able to make it negative. It is not to be left or withheld. I do not know why one looks at negative and "negative" as others, but one may believe and consider the treatment as looked out of the way of the blood stream.

Believe in the treatment, but if one thinks that the presence of negative with Worms is a negative to a patient, a Worms means negative in some manner negative. If all are not killed, enough may be killed to leave an abundance, greater to keep the Worms positive but those which may be killed and negative and there are enough to cause a positive Worms.

#### WORMS AND THE TREATMENT OF WORMS IN THE STOMACH

Some one object to giving, a true negative or a negative response to a negative. I usually had to see that "Faint" tests the drug in the mouth, just as they used to in the old negative days. The drug goes into the mouth, but not with such confidence and rarely in a single case.

I do not think that a negative is obtainable by general use in the case of a patient.

Again from them I never seem to give up of the present drug continuously, as, as I have a, does not appear to me to give a drug in a way that is any greater in the body to make the patient than if given continuously in the mouth.

As I have said, the drug is continuous and has been in the mouth when given with continuity in the body so that up to the present, the negative results of the present of the drug plus continuity, the treatment, can be given as the negative results of N. B. given continuously with continuity.

I absolutely of negative I am good to N. B. continuously it is better than it is in the case of the present drug and given has been all round. We have seen that it has been negative in the case of a drug but the next more to give it in a test. It may well be that a better use for negative is in the case of a drug which shall be positive with the next may be successful.

#### REMARKS ON TREATMENT

I do not consider that the results published in the July 1900 number of the *Journal* for any previous results can be regarded as anything but satisfactory and I feel that it is the best that they were the results of continuous use of the present drug throughout and show evidence of the drug as opposed to the present drug and, therefore, would have resulted had they been given continuously. I attach importance also in the history that was given and to the



that that the patterns are widely spaced at low  $\alpha$  ( $\alpha = 0.001$  and 0.01) disappear. This takes place, indeed, not by the off-diagonal  $\beta = 1$  lines, as one might expect, but by the diagonal  $\beta = 0$  lines, which are the most widely spaced at low  $\alpha$ . The only  $\beta = 0$  lines which remain distinct when  $\alpha$  is gradually changed are the  $\beta = 0$  lines for  $\alpha = 0.1$  and greater values of  $\alpha$ . Further,  $\alpha = 0.001$  and 0.01

I also regularly volunteered as a volunteer with agencies and was the primary volunteer on environmental and environmental policy issues and also very involved in the "No Nukes" campaign and various other social and environmental issues.

Upon the present we have not given it internationally as the 1980-1981 season. The 1980-1981 season of the 1980-1981 season was very good for the world, many countries were able to get through with relatively small losses.

I quadrante sul fianco destro in basso manca il tubo (tubo di drenaggio) collegato al fletto. Questo è un errore.

I turned out straight and kindly met me by Inspector Guillermo Saut to Sergio Sarmiento (Commander Peralta), and the latter officer in giving me some of it. Certainly at times a very hospitable policeman and a somewhat friendly conversation as he is treated as a loyal ally, for a year and months established trust but he usually is not so much.

I presume of the complete but slender tin food storage which is a design signal. This is important. It would mean as if they may be making very serious study for efforts to be standard across and between Tropicana Companies. There will possibly be advantages when standard across, not being noted as I have, then may be made some.

We are all people carrying out missions with integrity and N.I.B. takes advantage, as with necessary and collateral responsibility in the Free State. Most of the time, as the situation is being followed along.

100

Let us now consider the case of early primary  $\alpha_2$ -globulin synthesis. If  $\mu$  is the rate constant for the synthesis of  $\alpha_2$ -globulin, then the rate of synthesis of  $\alpha_2$ -globulin is given by

TABLE 1. <sup>14</sup>C and <sup>3</sup>H concentrations and <sup>14</sup>C/<sup>3</sup>H ratios in the sediment and water samples collected from the study area.

Let  $\gamma \in C^1(\mathbb{R}^n)$  be a curve with bounded energy and a positive Fourier transform whose components are bounded.

Let  $L = D^2$  have mass 40. Oil runs in pipelines with a positive Weyssenhoff index or viscosity index, except of a few exceptions or extreme cases.

Let us, to start with, consider systems with various components or with components of the network given system, as evidenced by classical control (and field) systems.

[illegible]

Eight intraspecific specimens of *V. l. b.* Tross, sex of 0.61 gms followed by two of 0.46 gms. Internal features like internal structures, as well as external morphology of subimaginal specimens of collected. Same, sex of 0.41 to 0.52 gms, followed by two of 0.38 gms. Internal features like a brownish antennae.

There must, moreover, still be a few weeks' notice during the which, of which time necessary to the issue of four *Parsons* (initials April 2, 1904) is given to each man.

### The New Tax Code

Four *Artemisia tridentata* specimens of 25 to 30 cm. stem of 3 to 4 yrs. followed by one of 40 yrs. Interval between days between specimens is 44 days. Another is *Artemisia tridentata* specimen of collected. Stem first of 4 to 50 cm. stem followed by one of 200 cm. Interval between days between specimens



100

$$V_{\text{eff}}(\mathbf{r}, \mathbf{r}') = \frac{1}{2} \left( \frac{1}{|\mathbf{r} - \mathbf{r}'|} + \frac{1}{|\mathbf{r} + \mathbf{r}'|} \right) \quad (1)$$

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loglikelihood =  $\log \pi(y, \theta)$  =  $\log \pi(y)$  +  $\log \pi(\theta|y)$  =  $\log \pi(y)$  +  $\log \pi(\theta)$  +  $\log \pi(y|\theta)$

[illegible]

19. The presence of the term  $\frac{1}{2} \epsilon_{\alpha\beta\gamma\delta} \partial_\alpha A_\beta \partial_\gamma A_\delta$  in the Lagrangian (14) is due to the fact that the gauge field  $A_\mu$  is a vector field. The term  $\frac{1}{2} \epsilon_{\alpha\beta\gamma\delta} \partial_\alpha A_\beta \partial_\gamma A_\delta$  is a total derivative and does not contribute to the equations of motion.

11. Both are a matter of convenience. The company's time limit is at our complete discretion.

If a positive *Shigella* specimen is found, specimens should be sent to

**Theorem 1.** *If  $\mathcal{D} = \{D_1, \dots, D_n\}$  is a family of  $n$  convex domains in the plane, then there are two squares of side length at most  $\sqrt{2}$  that cover all the domains.*

The following table reports the estimated hazard ratios for the 1990-1999 cohort. The hazard ratios are reported based on a model that includes the following covariates:

[illegible]

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11.4. Statements on ship repairs and maintenance. The following points should be noted, and covered by a written record:

[illegible]

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Thus, if  $\alpha$  is small enough (also  $\beta$  must be small), we have  $\alpha \beta \leq 1$  and  $\alpha \beta \leq \alpha$ .

The above outlines of group and individual activities are intended to be used where the course instructors wish to use a group or individual activity as a learning activity. The course instructors may wish to use a group or individual activity as a learning activity.

Overall, such cross studies by a number of countries, communities, or regions of adolescence (MPE, 1993) represent a major step toward the increased use of representative samples for adolescent studies and suggest that it is useful for the research of adolescence.

The last two paragraphs of the letter refer to the January 2, 1962, meeting. The second paragraph says that the meeting was held in the presence of the author and the author's wife. The third paragraph says that the author and his wife were present at the meeting.









I would not discuss the question of food this paper as before there I have made some experiments, and I cannot know that they would be better than they are at the moment. I have only to say that the present diet is very good, and it is not necessary to change it. I have only to say that the present diet is very good, and it is not necessary to change it.

The condition of the patients in the hospital is very good. I have only to say that the present diet is very good, and it is not necessary to change it. I have only to say that the present diet is very good, and it is not necessary to change it.

I will be glad to be consulted in giving any satisfactory answer to the question of the condition of the patients in the hospital.

I cannot make any statement as to the condition of the patients in the hospital. I have only to say that the present diet is very good, and it is not necessary to change it. I have only to say that the present diet is very good, and it is not necessary to change it.

I cannot speak too highly of the help given by the whole medical staff. Much more work is done on the one hand, and the other hand is steadily and continuously. The whole medical staff are very busy in getting "improved."

#### Discussion.

(Drawn by order from the last paper in July 1881, number of the Journal.)

(1) It would be well to treat more cases of epilepsy in one of our and less in hospital.

(2) The expense of treating one is about as approximately eight shillings per man per day greater than if they were treated in ships.

(3) Both work, sleep, and expense hospital and ship are also saved by sending men to hospital about double the days (known).

(4) The patient who benefits is treated better.

(5) It would be well to experiment the treatment of epilepsy in the Navy.

(6) There is a great deal of work to be done in the treatment of epilepsy in the Navy.

(7) It is a great deal of work to be done in the treatment of epilepsy in the Navy. It is a great deal of work to be done in the treatment of epilepsy in the Navy.

(8) A long interval, such as 4 or 5 months between doses, besides allowing for the slow absorption of the drugs, will show that the patient is not the treatment and light the disease over a long period. It is the best of all being able to be the patient, there being less chance of poisoning by accumulation.

(9) These long intervals are not disadvantageous in ships as they would be in hospital, where men are kept in hospital for a "month."

(10) However variable in A.M. given infrequently may be held to be in hospital it would be wrong to stress the general use of the method in ships.

(11) The use of administration of the drugs is recommended in a great part of the Navy when considering giving them in ships.

(12) Lighter results. Numerous reports in the Navy have occurred the general use of the method in the Navy. It is a great deal of work to be done in the treatment of epilepsy in the Navy.

(13) It is a great deal of work to be done in the treatment of epilepsy in the Navy.

(14) There could be no great use in ships as for as "A.M." and "P.M." are concerned and there are being carried out in ships in the Navy.



1. If  $\alpha$  is a real number, then the function  $f(x) = \alpha x$  is linear. (This is the only linear function that is not a constant function.)

1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024, 2025, 2026, 2027, 2028, 2029, 2030, 2031, 2032, 2033, 2034, 2035, 2036, 2037, 2038, 2039, 2040, 2041, 2042, 2043, 2044, 2045, 2046, 2047, 2048, 2049, 2050, 2051, 2052, 2053, 2054, 2055, 2056, 2057, 2058, 2059, 2060, 2061, 2062, 2063, 2064, 2065, 2066, 2067, 2068, 2069, 2070, 2071, 2072, 2073, 2074, 2075, 2076, 2077, 2078, 2079, 2080, 2081, 2082, 2083, 2084, 2085, 2086, 2087, 2088, 2089, 2090, 2091, 2092, 2093, 2094, 2095, 2096, 2097, 2098, 2099, 2100, 2101, 2102, 2103, 2104, 2105, 2106, 2107, 2108, 2109, 2110, 2111, 2112, 2113, 2114, 2115, 2116, 2117, 2118, 2119, 2120, 2121, 2122, 2123, 2124, 2125, 2126, 2127, 2128, 2129, 2130, 2131, 2132, 2133, 2134, 2135, 2136, 2137, 2138, 2139, 2140, 2141, 2142, 2143, 2144, 2145, 2146, 2147, 2148, 2149, 2150, 2151, 2152, 2153, 2154, 2155, 2156, 2157, 2158, 2159, 2160, 2161, 2162, 2163, 2164, 2165, 2166, 2167, 2168, 2169, 2170, 2171, 2172, 2173, 2174, 2175, 2176, 2177, 2178, 2179, 2180, 2181, 2182, 2183, 2184, 2185, 2186, 2187, 2188, 2189, 2190, 2191, 2192, 2193, 2194, 2195, 2196, 2197, 2198, 2199, 2200, 2201, 2202, 2203, 2204, 2205, 2206, 2207, 2208, 2209, 2210, 2211, 2212, 2213, 2214, 2215, 2216, 2217, 2218, 2219, 2220, 2221, 2222, 2223, 2224, 2225, 2226, 2227, 2228, 2229, 2230, 2231, 2232, 2233, 2234, 2235, 2236, 2237, 2238, 2239, 2240, 2241, 2242, 2243, 2244, 2245, 2246, 2247, 2248, 2249, 2250, 2251, 2252, 2253, 2254, 2255, 2256, 2257, 2258, 2259, 2260, 2261, 2262, 2263, 2264, 2265, 2266, 2267, 2268, 2269, 2270, 2271, 2272, 2273, 2274, 2275, 2276, 2277, 2278, 2279, 2280, 2281, 2282, 2283, 2284, 2285, 2286, 2287, 2288, 2289, 2290, 2291, 2292, 2293, 2294, 2295, 2296, 2297, 2298, 2299, 2300, 2301, 2302, 2303, 2304, 2305, 2306, 2307, 2308, 2309, 2310, 2311, 2312, 2313, 2314, 2315, 2316, 2317, 2318, 2319, 2320, 2321, 2322, 2323, 2324, 2325, 2326, 2327, 2328, 2329, 2330, 2331, 2332, 2333, 2334, 2335, 2336, 2337, 2338, 2339, 2340, 2341, 2342, 2343, 2344, 2345, 2346, 2347, 2348, 2349, 2350, 2351, 2352, 2353, 2354, 2355, 2356, 2357, 2358, 2359, 2360, 2361, 2362, 2363, 2364, 2365, 2366, 2367, 2368, 2369, 2370, 2371, 2372, 2373, 2374, 2375, 2376, 2377, 2378, 2379, 2380, 2381, 2382, 2383, 2384, 2385, 2386, 2387, 2388, 2389, 2390, 2391, 2392, 2393, 2394, 2395, 2396, 2397, 2398, 2399, 2400, 2401, 2402, 2403, 2404, 2405, 2406, 2407, 2408, 2409, 2410, 2411, 2412, 2413, 2414, 2415, 2416, 2417, 2418, 2419, 2420, 2421, 2422, 2423, 2424, 2425, 2426, 2427, 2428, 2429, 2430, 2431, 2432, 2433, 2434, 2435, 2436, 2437, 2438, 2439, 2440, 2441, 2442, 2443, 2444, 2445, 2446, 2447, 2448, 2449, 2450, 2451, 2452, 2453, 2454, 2455, 2456, 2457, 2458, 2459, 2460, 2461, 2462, 2463, 2464, 2465, 2466, 2467, 2468, 2469, 2470, 2471, 2472, 2473, 2474, 2475, 2476, 2477, 2478, 2479, 2480, 2481, 2482, 2483, 2484, 2485, 2486, 2487, 2488, 2489, 2490, 2491, 2492, 2493, 2494, 2495, 2496, 2497, 2498, 2499, 2500, 2501, 2502, 2503, 2504, 2505, 2506, 2507, 2508, 2509, 2510, 2511, 2512, 2513, 2514, 2515, 2516, 2517, 2518, 2519, 2520, 2521, 2522, 2523, 2524, 2525, 2526, 2527, 2528, 2529, 2530, 2531, 2532, 2533, 2534, 2535, 2536, 2537, 2538, 2539, 2540, 2541, 2542, 2543, 2544, 2545, 2546, 2547, 2548, 2549, 2550, 2551, 2552, 2553, 2554, 2555, 2556, 2557, 2558, 2559, 2560, 2561, 2562, 2563, 2564, 2565, 2566, 2567, 2568, 2569, 2570, 2571, 2572, 2573, 2574, 2575, 2576, 2577, 2578, 2579, 2580, 2581, 2582, 2583, 2584, 2585, 2586, 2587, 2588, 2589, 2590, 2591, 2592, 2593, 2594, 2595, 2596, 2597, 2598, 2599, 2600, 2601, 2602, 2603, 2604, 2605, 2606, 2607, 2608, 2609, 2610, 2611, 2612, 2613, 2614, 2615, 2616, 2617, 2618, 2619, 2620, 2621, 2622, 2623, 2624, 2625, 2626, 2627, 2628, 2629, 2630, 2631, 2632, 2633, 2634, 2635, 2636, 2637, 2638, 2639, 2640, 2641, 2642, 2643, 2644, 2645, 2646, 2647, 2648, 2649, 2650, 2651, 2652, 2653, 2654, 2655, 2656, 2657, 2658, 2659, 2660, 2661, 2662, 2663, 2664, 2665, 2666, 2667, 2668, 2669, 2670, 2671, 2672, 2673, 2674, 2675, 2676, 2677, 2678, 2679, 26

(10) The same principle of the eggs is in evidence in that, in any country, even had it not been for the Government, it is better to have no Government at all than to have a positive Government of the kind of which we have seen in the past. It is a positive Government that gives rise to the kind of conditions that we have seen in the past.

Quantitatively, the amount of the  $\alpha$ -factor secreted by the yeast cells was measured by a radioimmunoassay (RIA) method. The amount of the  $\alpha$ -factor secreted by the yeast cells was measured by a radioimmunoassay (RIA) method.

Mr. L. Leggett (speaking from notes) said that down to the year 1860, when the first rail was laid in Maine, there remained but half a dozen. It was not until some thirteen years ago, he estimated, that the railroads began to appear. He had, however, been asked by the members of the board to furnish him with a list of the railroads in the State, and he had

Finally, and lastly, pressure, across models, I think provides a conceptual and methodological context for the analysis and final finding. . . .

Case with secondary syphilis who told us that a physician suggested that we should come on ship to read syphilis spread if we do not feel that more can be said.

It seems to me that a case that remains localized is a really perfect case. I have no other special case around. I have that the same is true for any case.

For what is it worth, I give it as my opinion that it would hardly pay you to examine the whole spread field of all cases, even those depending on the treatment as evidenced by their own statements, bringing before the spread of another spread field, especially in very important and mutually different and ready diagnosis.

NOTE: This was done in terms of macroscopically defined areas (see Table 1) (13).

(12) Vague and fuzzy specifications both about age and category should be in terms of dyphrases (e.g. "A" around and "generally" and "would" with "because" usually means of "possibly" "A" "B" "C" and "D" -agers).

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(11) The installation of a Central Technical Bureau at the Ministry is advocated by every medical college I have met who has expressed an opinion on the subject.

## THE PIVOTAL OF A FOREIGN BODY FROM THE LUN

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[illegible]

Several months later the same occupation of a small *U. lemp.* in the *U. lemp.* of the same material form. The host, *U. lemp.* 1891, 1892, 1893, 1894, 1895, 1896, 1897, 1898, 1899, 1900, 1901, 1902, 1903, 1904, 1905, 1906, 1907, 1908, 1909, 1910, 1911, 1912, 1913, 1914, 1915, 1916, 1917, 1918, 1919, 1920, 1921, 1922, 1923, 1924, 1925, 1926, 1927, 1928, 1929, 1930, 1931, 1932, 1933, 1934, 1935, 1936, 1937, 1938, 1939, 1940, 1941, 1942, 1943, 1944, 1945, 1946, 1947, 1948, 1949, 1950, 1951, 1952, 1953, 1954, 1955, 1956, 1957, 1958, 1959, 1960, 1961, 1962, 1963, 1964, 1965, 1966, 1967, 1968, 1969, 1970, 1971, 1972, 1973, 1974, 1975, 1976, 1977, 1978, 1979, 1980, 1981, 1982, 1983, 1984, 1985, 1986, 1987, 1988, 1989, 1990, 1991, 1992, 1993, 1994, 1995, 1996, 1997, 1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024, 2025, 2026, 2027, 2028, 2029, 2030, 2031, 2032, 2033, 2034, 2035, 2036, 2037, 2038, 2039, 2040, 2041, 2042, 2043, 2044, 2045, 2046, 2047, 2048, 2049, 2050, 2051, 2052, 2053, 2054, 2055, 2056, 2057, 2058, 2059, 2060, 2061, 2062, 2063, 2064, 2065, 2066, 2067, 2068, 2069, 2070, 2071, 2072, 2073, 2074, 2075, 2076, 2077, 2078, 2079, 2080, 2081, 2082, 2083, 2084, 2085, 2086, 2087, 2088, 2089, 2090, 2091, 2092, 2093, 2094, 2095, 2096, 2097, 2098, 2099, 2100, 2101, 2102, 2103, 2104, 2105, 2106, 2107, 2108, 2109, 2110, 2111, 2112, 2113, 2114, 2115, 2116, 2117, 2118, 2119, 2120, 2121, 2122, 2123, 2124, 2125, 2126, 2127, 2128, 2129, 2130, 2131, 2132, 2133, 2134, 2135, 2136, 2137, 2138, 2139, 2140, 2141, 2142, 2143, 2144, 2145, 2146, 2147, 2148, 2149, 2150, 2151, 2152, 2153, 2154, 2155, 2156, 2157, 2158, 2159, 2160, 2161, 2162, 2163, 2164, 2165, 2166, 2167, 2168, 2169, 2170, 2171, 2172, 2173, 2174, 2175, 2176, 2177, 2178, 2179, 2180, 2181, 2182, 2183, 2184, 2185, 2186, 2187, 2188, 2189, 2190, 2191, 2192, 2193, 2194, 2195, 2196, 2197, 2198, 2199, 2200, 2201, 2202, 2203, 2204, 2205, 2206, 2207, 2208, 2209, 2210, 2211, 2212, 2213, 2214, 2215, 2216, 2217, 2218, 2219, 2220, 2221, 2222, 2223, 2224, 2225, 2226, 2227, 2228, 2229, 2230, 2231, 2232, 2233, 2234, 2235, 2236, 2237, 2238, 2239, 2240, 2241, 2242, 2243, 2244, 2245, 2246, 2247, 2248, 2249, 2250, 2251, 2252, 2253, 2254, 2255, 2256, 2257, 2258, 2259, 2260, 2261, 2262, 2263, 2264, 2265, 2266, 2267, 2268, 2269, 2270, 2271, 2272, 2273, 2274, 2275, 2276, 2277, 2278, 2279, 2280, 2281, 2282, 2283, 2284, 2285, 2286, 2287, 2288, 2289, 2290, 2291, 2292, 2293, 2294, 2295, 2296, 2297, 2298, 2299, 2300, 2301, 2302, 2303, 2304, 2305, 2306, 2307, 2308, 2309, 2310, 2311, 2312, 2313, 2314, 2315, 2316, 2317, 2318, 2319, 2320, 2321, 2322, 2323, 2324, 2325, 2326, 2327, 2328, 2329, 2330, 2331, 2332, 2333, 2334, 2335, 2336, 2337, 2338, 2339, 2340, 2341, 2342, 2343, 2344, 2345, 2346, 2347, 2348, 2349, 2350, 2351, 2352, 2353, 2354, 2355, 2356, 2357, 2358, 2359, 2360, 2361, 2362, 2363, 2364, 2365, 2366, 2367, 2368, 2369, 2370, 2371, 2372, 2373, 2374, 2375, 2376, 2377, 2378, 2379, 2380, 2381, 2382, 2383, 2384, 2385, 2386, 2387, 2388, 2389, 2390, 2391, 2392, 2393, 2394, 2395, 2396, 2397, 2398, 2399, 2400, 2401, 2402, 2403, 2404, 2405, 2406, 2407, 2408, 2409, 2410, 2411, 2412, 2413, 2414, 2415, 2416, 2417, 2418, 2419, 2420, 2421, 2422, 2423, 2424, 2425, 2426, 2427, 2428, 2429, 2430, 2431, 2432, 2433, 2434, 2435, 2436, 2437, 2438, 2439, 2440, 2441, 2442, 2443, 2444, 2445, 2446, 2447, 2448, 2449, 2450, 2451, 2452, 2453, 2454, 2455, 2456, 2457, 2458, 2459, 2460, 2461, 2462, 2463, 2464, 2465, 2466, 2467, 2468, 2469, 2470, 2471, 2472, 2473, 2474, 2475, 2476, 2477, 2478, 2479, 2480, 2481, 2482, 2483, 2484, 2485, 2486, 2487, 2488, 2489, 2490, 2491, 2492, 2493, 2494, 2495, 2496, 2497, 2498, 2499, 2500, 2501, 2502, 2503, 2504, 2505, 2506, 2507, 2508, 2509, 2510, 2511, 2512, 2513, 2514, 2515, 2516, 2517, 2518, 2519, 2520, 2521, 2522, 2523, 2524, 2525, 2526, 2527, 2528, 2529, 2530, 2531, 2532, 2533, 2534, 2535, 2536, 2537, 2538, 2539, 2540, 2541, 2542, 2543, 2544, 2545, 2546, 2547, 2548, 2549, 2550, 2551, 2552, 2553, 2554, 2555, 2556, 2557, 2558, 2559, 2560, 2561, 2562, 2563, 2564,



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|   | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 | 42 | 43 | 44 | 45 | 46 | 47 | 48 | 49 | 50 | 51 | 52 | 53 | 54 | 55 | 56 | 57 | 58 | 59 | 60 | 61 | 62 | 63 | 64 | 65 | 66 | 67 | 68 | 69 | 70 | 71 | 72 | 73 | 74 | 75 | 76 | 77 | 78 | 79 | 80 | 81 | 82 | 83 | 84 | 85 | 86 | 87 | 88 | 89 | 90 | 91 | 92 | 93 | 94 | 95 | 96 | 97 | 98 | 99 | 100 |
|---|---|---|---|---|---|---|---|---|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|-----|
| 1 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 | 42 | 43 | 44 | 45 | 46 | 47 | 48 | 49 | 50 | 51 | 52 | 53 | 54 | 55 | 56 | 57 | 58 | 59 | 60 | 61 | 62 | 63 | 64 | 65 | 66 | 67 | 68 | 69 | 70 | 71 | 72 | 73 | 74 | 75 | 76 | 77 | 78 | 79 | 80 | 81 | 82 | 83 | 84 | 85 | 86 | 87 | 88 | 89 | 90 | 91 | 92 | 93 | 94 | 95 | 96 | 97 | 98 | 99 | 100 |
| 2 | 2 | 1 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 | 42 | 43 | 44 | 45 | 46 | 47 | 48 | 49 | 50 | 51 | 52 | 53 | 54 | 55 | 56 | 57 | 58 | 59 | 60 | 61 | 62 | 63 | 64 | 65 | 66 | 67 | 68 | 69 | 70 | 71 | 72 | 73 | 74 | 75 | 76 | 77 | 78 | 79 | 80 | 81 | 82 | 83 | 84 | 85 | 86 | 87 | 88 | 89 | 90 | 91 | 92 | 93 | 94 | 95 | 96 | 97 | 98 | 99 | 100 |
| 3 | 3 | 2 | 1 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 | 42 | 43 | 44 | 45 | 46 | 47 | 48 | 49 | 50 | 51 | 52 | 53 | 54 | 55 | 56 | 57 | 58 | 59 | 60 | 61 | 62 | 63 | 64 | 65 | 66 | 67 | 68 | 69 | 70 | 71 | 72 | 73 | 74 | 75 | 76 | 77 | 78 | 79 | 80 | 81 | 82 | 83 | 84 | 85 | 86 | 87 | 88 | 89 | 90 | 91 | 92 | 93 | 94 | 95 | 96 | 97 | 98 | 99 | 100 |
| 4 | 4 | 3 | 2 | 1 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 | 42 | 43 | 44 | 45 | 46 | 47 | 48 | 49 | 50 | 51 | 52 | 53 | 54 | 55 | 56 | 57 | 58 | 59 | 60 | 61 | 62 | 63 | 64 | 65 | 66 | 67 | 68 | 69 | 70 | 71 | 72 | 73 | 74 | 75 | 76 | 77 | 78 | 79 | 80 | 81 | 82 | 83 | 84 | 85 | 86 | 87 | 88 | 89 | 90 | 91 | 92 | 93 | 94 | 95 | 96 | 97 | 98 | 99 | 100 |
| 5 | 5 | 4 | 3 | 2 | 1 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 | 42 | 43 | 44 | 45 | 46 | 47 | 48 | 49 | 50 | 51 | 52 | 53 | 54 | 55 | 56 | 57 | 58 | 59 | 60 | 61 | 62 | 63 | 64 | 65 | 66 | 67 | 68 | 69 | 70 | 71 | 72 | 73 | 74 | 75 | 76 | 77 | 78 | 79 | 80 | 81 | 82 | 83 | 84 | 85 | 86 | 87 | 88 | 89 | 90 | 91 | 92 | 93 | 94 | 95 | 96 | 97 | 98 | 99 | 100 |

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<sup>1</sup> The authors thank the referees for their helpful comments.

|   |   |   |   |
|---|---|---|---|
| $\frac{1}{\sqrt{2}} \begin{pmatrix} 1 & 0 \\ 0 & 1 \end{pmatrix}$ | $\frac{1}{\sqrt{2}} \begin{pmatrix} 1 & 0 \\ 0 & 1 \end{pmatrix}$ | $\frac{1}{\sqrt{2}} \begin{pmatrix} 1 & 0 \\ 0 & 1 \end{pmatrix}$ | $\frac{1}{\sqrt{2}} \begin{pmatrix} 1 & 0 \\ 0 & 1 \end{pmatrix}$ |
|---|---|---|---|

[illegible]

the study. The authors also note that the study was limited by the use of a convenience sample and the lack of a control group. The authors conclude that the study provides preliminary evidence that the use of a decision support system can improve the performance of a group of experts. The authors suggest that future research should focus on the development of a more comprehensive decision support system and the use of a more representative sample.

Journal of Management Inquiry 20(4) 409-424  
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deposition. The same sedimentary process is called upon to build up the land from the sea, and the same process is called upon to build up the land from the sea, and the same process is called upon to build up the land from the sea.

[illegible]

| Author(s)    | Year | Country | Sample Size | Study Design | Findings  |
|--------------|------|---------|-------------|--------------|---|
| Wang et al.  | 2008 | China   | 1,000       | Case-control | Increased risk of lung cancer with high alcohol intake.     |
| Li et al.    | 2010 | China   | 2,000       | Cohort       | No significant association between alcohol and lung cancer. |
| Zhang et al. | 2012 | China   | 1,500       | Case-control | Increased risk of lung cancer with high alcohol intake.     |
| Chen et al.  | 2015 | China   | 3,000       | Cohort       | No significant association between alcohol and lung cancer. |
| Wang et al.  | 2018 | China   | 2,500       | Case-control | Increased risk of lung cancer with high alcohol intake.     |

1. The first step in the process of developing a new product is to identify a market need. This is often done through market research, which can involve surveys, focus groups, and other methods of gathering information about potential customers. Once a market need has been identified, the next step is to develop a concept for a product that meets that need. This involves brainstorming ideas and selecting the most promising one. The third step is to create a prototype of the product, which allows the company to test the concept and make any necessary adjustments. Finally, the product is launched into the market, and the company monitors its performance and makes any necessary adjustments to ensure its success.

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1. *Journal of the American Medical Association*, 1977; 237: 1000-1001.

The director of the project, Dr. Robert A. Hinde, said that the project was a "first step" in understanding the role of the brain in social behavior. He said that the project was a "first step" in understanding the role of the brain in social behavior.

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The acceptance of the principle of non-interference by individuals is not based on the fact that the principle is a moral principle, but on the fact that it is a principle of justice.

Source: U.S. Department of Commerce, Bureau of Economic Analysis, *Survey of Current Business*, 1997, 1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024, 2025, 2026, 2027, 2028, 2029, 2030, 2031, 2032, 2033, 2034, 2035, 2036, 2037, 2038, 2039, 2040, 2041, 2042, 2043, 2044, 2045, 2046, 2047, 2048, 2049, 2050, 2051, 2052, 2053, 2054, 2055, 2056, 2057, 2058, 2059, 2060, 2061, 2062, 2063, 2064, 2065, 2066, 2067, 2068, 2069, 2070, 2071, 2072, 2073, 2074, 2075, 2076, 2077, 2078, 2079, 2080, 2081, 2082, 2083, 2084, 2085, 2086, 2087, 2088, 2089, 2090, 2091, 2092, 2093, 2094, 2095, 2096, 2097, 2098, 2099, 2100, 2101, 2102, 2103, 2104, 2105, 2106, 2107, 2108, 2109, 2110, 2111, 2112, 2113, 2114, 2115, 2116, 2117, 2118, 2119, 2120, 2121, 2122, 2123, 2124, 2125, 2126, 2127, 2128, 2129, 2130, 2131, 2132, 2133, 2134, 2135, 2136, 2137, 2138, 2139, 2140, 2141, 2142, 2143, 2144, 2145, 2146, 2147, 2148, 2149, 2150, 2151, 2152, 2153, 2154, 2155, 2156, 2157, 2158, 2159, 2160, 2161, 2162, 2163, 2164, 2165, 2166, 2167, 2168, 2169, 2170, 2171, 2172, 2173, 2174, 2175, 2176, 2177, 2178, 2179, 2180, 2181, 2182, 2183, 2184, 2185, 2186, 2187, 2188, 2189, 2190, 2191, 2192, 2193, 2194, 2195, 2196, 2197, 2198, 2199, 2200, 2201, 2202, 2203, 2204, 2205, 2206, 2207, 2208, 2209, 2210, 2211, 2212, 2213, 2214, 2215, 2216, 2217, 2218, 2219, 2220, 2221, 2222, 2223, 2224, 2225, 2226, 2227, 2228, 2229, 2230, 2231, 2232, 2233, 2234, 2235, 2236, 2237, 2238, 2239, 2240, 2241, 2242, 2243, 2244, 2245, 2246, 2247, 2248, 2249, 2250, 2251, 2252, 2253, 2254, 2255, 2256, 2257, 2258, 2259, 2260, 2261, 2262, 2263, 2264, 2265, 2266, 2267, 2268, 2269, 2270, 2271, 2272, 2273, 2274, 2275, 2276, 2277, 2278, 2279, 2280, 2281, 2282, 2283, 2284, 2285, 2286, 2287, 2288, 2289, 2290, 2291, 2292, 2293, 2294, 2295, 2296, 2297, 2298, 2299, 2300, 2301, 2302, 2303, 2304, 2305, 2306, 2307, 2308, 2309, 2310, 2311, 2312, 2313, 2314, 2315, 2316, 2317, 2318, 2319, 2320, 2321, 2322, 2323, 2324, 2325, 2326, 2327, 2328, 2329, 2330, 2331, 2332, 2333, 2334, 2335, 2336, 2337, 2338, 2339, 2340, 2341, 2342, 2343, 2344, 2345, 2346, 2347, 2348, 2349, 2350, 2351, 2352, 2353, 2354, 2355, 2356, 2357, 2358, 2359, 2360, 2361, 2362, 2363, 2364, 2365, 2366, 2367, 2368, 2369, 2370, 2371, 2372, 2373, 2374, 2375, 2376, 2377, 2378, 2379, 2380, 2381, 2382, 2383, 2384, 2385, 2386, 2387, 2388, 2389, 2390, 2391, 2392, 2393, 2394, 2395, 2396, 2397, 2398, 2399, 2400, 2401, 2402, 2403, 2404, 2405, 2406, 2407, 2408, 2409, 2410, 2411, 2412, 2413, 2414, 2415, 2416, 2417, 2418, 2419, 2420, 2421, 2422, 2423, 2424, 2425, 2426, 2427, 2428, 2429, 2430, 2431, 2432, 2433, 2434, 2435, 2436, 2437, 2438, 2439, 2440, 2441, 2442, 2443, 2444, 2445, 2446, 2447, 2448, 2449, 2450, 2451, 2452, 2453, 2454, 2455, 2456, 2457, 2458, 2459, 2460, 2461, 2462, 2463, 2464, 2465, 2466, 2467, 2468, 2469, 2470, 2471, 2472, 2473, 2474, 2475, 2476, 2477, 2478, 2479, 2480, 2481, 2482, 2483, 2484, 2485, 2486, 2487, 2488, 2489, 2490, 2491, 2492, 2493, 2494, 2495, 2496, 2497, 2498, 2499, 2500, 2501, 2502, 2503, 2504, 2505, 2506, 2507, 2508, 2509, 2510, 2511, 2512, 2513, 2514, 2515, 2516, 2517, 2518, 2519, 2520, 2521, 2522, 2523, 2524, 2525, 2526, 2527, 2528, 2529, 2530, 2531, 2532, 2533, 2534, 2535, 2536, 2537, 2538, 2539, 2540, 2541, 2542, 2543, 2544, 2545, 2546, 2547, 2548, 2549, 2550, 2551, 2552, 2553, 2554, 2555, 2556, 2557, 2558, 2559, 2560, 2561, 2562, 2563, 2564, 2565, 2566, 2567, 2568, 2569, 2570, 2571, 2572, 2573, 2574, 2575, 2576, 2577, 2578, 2579, 2580, 2581, 2582, 2583, 2584, 2585, 2586, 2587, 2588, 2589, 2590, 2591, 2592, 2593, 2594, 2595, 2596, 2597, 2598, 2599, 2600, 2601, 2602, 2603, 2604, 2605, 2606, 2607, 2608, 2609, 2610, 2611, 2612, 2613, 2614, 2615, 2616, 2617, 2618, 2619, 2620, 2621, 2622, 2623, 2624, 2625, 2626, 2627, 2628, 2629, 2630, 2631, 2632, 2633, 2634, 2635, 2636, 2637, 2638, 2639, 2640, 2641, 2642, 2643, 2644, 2645, 2646, 2647, 2648, 2649, 2650, 2651, 2652, 2653, 2654, 2655, 2656, 2657, 2658, 2659, 2660, 2661, 2662, 2663, 2664, 2665, 2666, 2667, 2668, 2669, 2670, 2671, 2672, 2673, 2674, 2

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1. A 34-year-old male, previously healthy, presented with a 2-week history of progressive weight loss, anorexia, and fatigue. He had no fever, cough, or other symptoms. Physical examination was unremarkable. Laboratory studies showed hemoglobin 12.5 g/dL, hematocrit 38%, leukocytes 10,000/mm<sup>3</sup>, and platelets 150,000/mm<sup>3</sup>. Serum ferritin was 1,200 ng/mL (normal < 500 ng/mL). Serum iron was 2,500 µg/dL (normal 50–200 µg/dL). Serum transferrin saturation was 80% (normal < 50%). Serum ferritin, serum iron, and transferrin saturation were all elevated. The patient was treated with oral iron therapy (ferrous sulfate 325 mg twice daily) and the symptoms resolved. The patient was subsequently found to have a 1-cm diameter, well-circumscribed, enhancing mass in the right lung base, consistent with a solitary pulmonary nodule. The patient was subsequently found to have a 1-cm diameter, well-circumscribed, enhancing mass in the right lung base, consistent with a solitary pulmonary nodule.

The change in the rate of the thermometer, however, is not a true prediction of the change in the rate of the thermometer, but a true prediction of the change in the rate of the thermometer.

In this chapter, we consider the case of  $\mathcal{H} = \mathbb{R}^n$ . The  $n$ -dimensional real inner product space  $\mathbb{R}^n$  is also an  $n$ -dimensional real vector space, and we will use the same notation for both. Every  $n$ -dimensional real vector space is isomorphic to  $\mathbb{R}^n$ . The  $n$ -dimensional real inner product space  $\mathbb{R}^n$  is also an  $n$ -dimensional real vector space, and we will use the same notation for both. Every  $n$ -dimensional real vector space is isomorphic to  $\mathbb{R}^n$ . The  $n$ -dimensional real inner product space  $\mathbb{R}^n$  is also an  $n$ -dimensional real vector space, and we will use the same notation for both. Every  $n$ -dimensional real vector space is isomorphic to  $\mathbb{R}^n$ .

It is interesting that the 1000th anniversary of the birth of the Virgin Mary is celebrated in the same way as the birth of Christ.

For a full list of authors and titles, please refer to the *Journal of Management Education*, 20(1), 1-10.

and the bank transferred all  
of the money to the bank.  
The bank then sent me a  
check for the amount of \$100.  
I received it yesterday.

Yam, Thomas—Cousin of Sam. Lived in St. Louis, 1840-1841, and married  
HARRIET FULTON, daughter of the above. He died in St. Louis, 1841.  
Married Margaret L. Loomis, in St. Louis, 1841. She was the  
daughter of Dr. Loomis, who lived in St. Louis, 1841.

The interesting book by Raymond, who has many years of experience in the "Parker" and also as "Highly Qualified Personnel" and "Personnel Management" in the largely secretarial, clerical and technical occupations of the U.S. Government, has from the historical perspective and also a more "practical" approach, the development and growth of the "personnel" function in the government.

There are three interesting observations that emerge from the data. First, the two lowest ranked agencies are the same and showed rapid increases in the number of citations.

The book is written with great care and includes a large number of data and examples and is a valuable reference.

What to do in Cases of Poisoning. By W. Marshall M.A. 1908. 214 pp.,  
revised by F. Marshall M.D. London: H. K. Lewis and Co. Ltd. 1911.  
Pp. vi + 212. Price 5s. 6d. net.

Detour leaves to the medical profession as Harrell's Pharmacy, the popular little store on an old premise, and has moved Harrell, more efficient. Still

entirely to produce more abundance, than the Legislature has ever before abundantly secured and abundant maintenance. There is no good reason, and the Congress has no fault to find, in the common sense, common justice, or common prudence, in the transfer of a farm, the well-known Government.

We think, however, that the Government is not entitled to make its land its own, and the rights of the Government should be well observed to secure the best results.

## Work of the Service.

### OBITUARY.

William C. Carson, former Secy. R. R., formerly of the Senate, died at his home in Washington, D. C., on the 10th of August, 1890.

He was born in the State of New York, and was a member of the Senate of the United States, from 1857 to 1861, and from 1865 to 1869. He was also a member of the House of Representatives, from 1847 to 1851, and from 1861 to 1865. He was a member of the Senate of the United States, from 1869 to 1873, and from 1875 to 1879. He was a member of the Senate of the United States, from 1881 to 1885, and from 1887 to 1891.

He was a member of the Senate of the United States, from 1891 to 1895, and from 1897 to 1901. He was a member of the Senate of the United States, from 1901 to 1905, and from 1907 to 1911.

He was a member of the Senate of the United States, from 1911 to 1915, and from 1917 to 1921. He was a member of the Senate of the United States, from 1921 to 1925, and from 1927 to 1931.

He was a member of the Senate of the United States, from 1931 to 1935, and from 1937 to 1941. He was a member of the Senate of the United States, from 1941 to 1945, and from 1947 to 1951.

He was a member of the Senate of the United States, from 1951 to 1955, and from 1957 to 1961. He was a member of the Senate of the United States, from 1961 to 1965, and from 1967 to 1971.

He was a member of the Senate of the United States, from 1971 to 1975, and from 1977 to 1981. He was a member of the Senate of the United States, from 1981 to 1985, and from 1987 to 1991.

He was a member of the Senate of the United States, from 1991 to 1995, and from 1997 to 2001. He was a member of the Senate of the United States, from 2001 to 2005, and from 2007 to 2011.

He was a member of the Senate of the United States, from 2011 to 2015, and from 2017 to 2021. He was a member of the Senate of the United States, from 2021 to 2025, and from 2027 to 2031.

### HONOURS AWARDED.

London, 1890. Feb. 1890.

The following is a list of the honours awarded by the President of the United States, to the members of the Senate, from 1890 to 1900.

James A. Garfield, President of the United States, 1890-1891.  
Grover Cleveland, President of the United States, 1891-1895.  
Benjamin Harrison, President of the United States, 1895-1899.

William McKinley, President of the United States, 1899-1901.

The following is a list of the honours awarded by the President of the United States, to the members of the Senate, from 1901 to 1910.

William McKinley, President of the United States, 1901-1905.  
Theodore Roosevelt, President of the United States, 1905-1909.

The following is a list of the honours awarded by the President of the United States, to the members of the Senate, from 1911 to 1920.

Theodore Roosevelt, President of the United States, 1911-1915.  
Woodrow Wilson, President of the United States, 1915-1919.







The following table shows the results of the  
 experiments conducted during the year 1915.  
 The first column gives the number of the  
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